





HANDBOOK OF ARCHITECTURE

Part II

ARCHITECTURAL STYLES

Volume 5-1

RENAISSANCE ARCHITECTURE IN ITALY

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This volume forms the natural conclusion of the two volumes of this Handbook previously published (Part II, Vol. I. Architecture of the Greeks, and Vol. II, Architecture of the Romans and the Byzantines), and which may be regarded as a connected entirety; for upon the first book are based the others in a historical sequence.

If in the treatment greater value is attributed to structural methods, many of which are treated in considerable detail, yet it will not be forgotten, that first of all here, an architectural address is required, but on the other hand also, as must not neglect to arouse higher and purer feelings without which all art forfeits its existence; by a corresponding emphasis of the historical procedures and aesthetic impulses.

The introductory words proceeded in about this manner in the first edition of this volume in the year 1902.

The Architecture of the Greeks has passed through three, that of the Byzantines and Romans through two editions in the meantime, each with a thorough revision and a considerable increase of sketches and illustrations.

Similar changes are shown by this second edition of the Architecture of the Renaissance in Italy.

Meanwhile ten years have elapsed, since the estimation of ancient art in the German empire was subject to the most diverse variations. Men believed that by denial and contempt for the faith in the good ancient art, new things might be created. Whatever else may have been committed then in word and deed by the competent and incompetent, we shall conceal by the mantle of Christian love. Much of this is indeed no

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longer intelligible, and has been judged by itself.

We have not become much richer on the whole by the movement, even if we do not desire to contest its necessity. The interest in mediaeval art had vanished, when we threw ourselves into the arms of dry Palladian English Renaissance, the Empire with its offshoots in Germany, and the Biedermeier style. But therefore the antique has again struck more roots and won esteem.

After the unfortunate experiment with the primitive as a German national style, the tendency in architecture rather desires to assume the character of a certain unity, whereby the philosophy of Schopenhauer has not been neglected. (See quotation preceding the Introduction to this volume.).

The study and reverence for a past art tendency does not exclude the search for new paths. They are indispensable for production. We must know and understand what was undertaken before us.

"Not the perfection of a work is its chief charm, but originality within the limits of truth and possibility. -- Caprice is not will power, lack of logic is not originality, and skill must not be confused with talent".

So will the required work be accepted and judged.

Carlsruhe. December. 1913.

Josef Durm.

Part II. Division 3.
ARCHITECTURE OF THE RENAISSANCE.

Section 1.

Architecture of the Renaissance in Italy.

By Josef Durn. Ph. D. D. Eng.

General Part.

Section 1.

INTRODUCTION, GENERAL AND HISTORICAL.

"Therefore have we always wandered just as far from good taste and beauty, as we have wandered from the Greeks; most widely in sculpture and architecture; the ancients never become antiquated. They are and remain the polestar for all undertakings, whether in literature or the formative arts, which we should never lose from view. Shame awaits the period, which presumes to set aside the ancients. Therefore if a depraved, miserable and only materially directed "present time" abandons their school anywhere, to find itself more comfortable in its own darkness, it then sows shame and disgrace".

Schopenhauer. Parerga and Paralipomena. 4 th edition. Leipzig. 1878. Vol. 2. p. 436.

1. Survey.

Scarcely had the storms of the migration of the races ceased, which raged throughout the Italian peninsula, and threatened to sweep away antique civilization, than with the end of barbarism appeared to the still half antique people the recollection of its great past; they honored this and desired to reconnect themselves to it. ^{1.}

Note 1. See Burckhard, J. Cultur der Renaissance. 4 th edition. Leipzig. 1885. Vol. 1. p. 197.

The prelude to this mighty procedure was undertaken by learned men, poets and rulers (Petrarch, Mussato, Boccacio, Dante, Cola Rienzi); formative artists entered the scene after these, but with more splendid results, when architects and sculptors yielded to the influence of the antique, while painters had less use for it, because nearly all great models for them had disappeared.

Upper Italy and Tuscany at first adhered in their architectural problems to the Romanesque architectural style of Central Europe, while Venice rather cherished the Byzantine style,

together with almost all Lower Italy. The earliest attempts to "reanimate" the architectural forms of ancient Rome were made in the actual city itself and in Tuscany.

Already in the 3-aisled Basilica of S. Maria in Trastevere (1140-1198), the arch was compelled to yield to the architrave in the interior for connecting the free supports; on the exterior of the portico of S. Lorenzo-f-M (1216-1227) and on Ss. Giovanni e Paolo, which was restored after the plundering by Robert Guiscard, the antique architrave again recovered its ancient rights. (Figs. 1, 2). The Roman stonemasons and mosaicists -- the artist family of the Cosmati -- created in the 12th and 13th centuries the magnificent pavements in S. Maria Maggiore and S. Maria in Trastevere, and then the precious cloisters in S. Sabina, in the Lateran and in S. Paolo-f-M, works permeated by the antique spirit, not inferior in invention and beauty of details to the creations of the ancients, but wherein their masters knew how to make their individuality evident. It was no slavish imitation of ancient harmonies, note for note. The works of the Cosmati do not equal these in magnitude and massiveness, or in force of construction, but indeed in the well-weighed proportions, in the spirited combination of the ashlar with their precious colored ornamentation. No visitor to these little courts (Fig. 3) can repel the charm of their effect; smiling peace and not the damp air of the Northern cloister prevails in these porticos! Likewise should be mentioned here the portico of the Cathedral of Civita Castellana, built about 1210 by Laurentius, Jacobus and Cosmus Romanus.

More boldly enters Florence, the Tuscan capital, also called to take the lead during the later changes in affairs. It presents to us the Baptistery in the lower city, the quiet octagonal structure with a dignified effect (1150 A.D.), with its white marble panels enclosed by Verde di Prato (Prato green), portal columns, its polygonal piers joined by blind arches, and the graceful Corinthian pilasters of the walls. The subdivision of the internal walls is entirely antique in conception with shallow recesses and free columns, their gilded Corinthian capitals, above which is the antique entablature, (compare the arrangement in the Pantheon), over this being t

the wall pilasters with the intermediate doubled arches on small columns, the main cornice continuous and receiving the dome, -- these are works, that no antique master could have improved. (Fig. 4).

On the hill beyond the Arno rises the wonderful Church of S. Miniato (1207) with its original facade of equal age with the Baptistery; with these should not be forgotten the facades of S. Andrea at Empoli (1093), S. Salvatore of Vescovo and the Badia of Fiesole.

2. Protorenaissance and Gothic.

But the strongly Romanesque buildings also frequently exhibit the most beautiful antique or antique-like detail forms, and the architecture in the paintings of Giotto and his pupils has purely antique shapes. By such works the "Protorenaissance" demanded entrance, but this was still delayed by the new "Gothic style", originating in France in the 13th century.

German masters brought the French style to Italy, and it conquered, not by the advantages of its ornamental appearance, but rather "as the mightiest form of vaulted construction with the least possible material". (See the Section on Ecclesiastical Buildings). In church architecture the Gothic of Italy excelled in the end its instructors in what concerns the treatment of interiors; for no cathedral on this side the Alps can exhibit such an interior as S. Petronio at Bologna, in spite of its being only half finished, and now without color ornamentation.² But to the secular buildings of the style in Italy are lacking the charming fanciful play of form of our structures in Lower and Northern Germany with their roof ornaments, bays, small stair towers etc., the high roof compelling an effective outline of the building, which is also peculiar to French Gothic, and that the Renaissance masters in this country (Germany) retained in their creations, thus lending them another peculiar charm. Still defiant and fortress-like appear in the cities of Italy the early Renaissance palaces of the nobles and of the rising class of wealthy citizens; regular and symmetrical are arranged their facades, the windows resting on a continuous belt, opening in the masonry at regular distances, the ground story generally closed or merely animated by small windows, arranged for the safety of

the occupants and for defense. The living story no longer lies at the ground level, as in the antique house; it is placed in the second story; the principal story changes its place; the stairs and passages to it require a correspondingly more imposing treatment. Battlements for defense crown the facade walls, or rise above them on the but moderately projecting arched cornices.

Note 2. The painting of the interior in the Gothic period was later covered by yellowish-white limewash. On a pier of the middle aisle, it was recently uncovered again in part and determined.

We also frequently find the corbelling out of the stories, derived from wooden construction and translated into stone, the facade walls resting on stone consoles or stone arches, in order to allow greater width of street required by increasing traffic, and to again recover this yielded floor area in the upper stories.

In the 15th century the great art of the 13th and 14th centuries had exhausted its force; the Gothic ceased; it had reached the limits of its system, and a return to simpler forms was the only means for reviving the art. Men had recourse to the antique orders.

The round arch again appeared in place of the pointed arch, and where it exists on a Gothic building, it is the first certain indication of the dying of this style tendency.

3. Transition Style.

The Gothic style was employed for a time in certain regions freely beside the Renaissance, but wearied and without the cheerful ornamental deterioration in Northern Countries, as in France, Germany and England. To this was frequently added the continuance of the old style for unfinished buildings, especially for churches. Even in 1514 it was desired to build the facade of S. Petronio in Bologna in Gothic, and the great Renaissance master Baldissaro Peruzzi furnished for this two designs in the Gothic style.

Already Niccolo Pisani and Arnolfo worked at pleasure in the old and the new styles, and thereby contributed no little to the uncertainty in the judgment of the owners and of the public.³ The Bolognese architect Ariguzzi complained in this sense even about 1514. -- "Persons of all sorts, priests, monks,

artisans, owners, schoolmasters, sergeants, potters, spindle-makers, laborers and even water carriers regard themselves as architects, and give their opinions -- but none appear with models or drawings"! Phenomena that likewise appear in our times, artistically so uncertain, excepting that the number of the officious has seriously increased, who lead yet further astray the building and criticizing public. (See the so-called art supplements in most political and trade journals, in which ladies and gentlemen of all sorts of callings and of knowledge by faith lend expression to their feelings).

Note 3. Burckhardt, J. *Geschichte der Renaissance in Italien*; 2nd. edition. Stuttgart. 1878. p. 24, 30.

The early Renaissance is generally more tolerant than the developed style; it still esteems the works of its predecessor; it removes nothing, and thus originates a number of buildings in which compete the picturesque charm and the frankness in the mixture, and in a peaceful combination of the old and the new, still putting forth charming flowers. Painting and sculpture already work together more freely and grandly, -- but in the highest period of the style, -- with a more imposing development of the interior according to the saying, that vaulted rooms cannot be sufficiently high and spacious; for use of the noblest things in architecture in the height of the stories.

And if Filarete (1460) said of Gothic; "accursed be whoever invented this botchery"; I believe that only barbarians could bring it to Italy"; -- yet it was he, like many others of the early time, who was yet so good natured as to adopt the pointed arch in his facade architecture, and he gave to his discontent the best expression, worthy of an artist, only by clothing the structural forms with the most charming details, that the Renaissance created. (Fig. 5).

4. Examples.

With these creations of the transition style, I include among church buildings also the interior of S. Francesco in Rimini (1445) and S. Maria della Catena in Palermo, erected in the 15th century on the site of an old church.⁴ On the portico and in the interior are the segmental arches, that are more frequently found on buildings of the transition style f

from Gothic to the Renaissance, profiled with especial originality and executed as peculiarly applied to the vertical surfaces. (Fig. 6). Further certain parts of the cathedrals in Como and in Sebenico are to be placed here; likewise the cloister of S. Maria della Quercia near Viterbo, with the Gothic lower story and the round arcade on Ionic columns in the upper story. (Fig. 7). Also the doors of Filarete for S. Peter in Rome (1445), formerly gleaming with gold and enamel, may be named here as famous productions in the domain of the minor arts.

Note 4. Reproduced from Hittorf, J.J. & L. Zanth. *Architecture Moderne de la Sicile*. Paris. 1835.

Of secular buildings are to be mentioned:-- portions of the Hospital Grande in Milan (Fig. 5), as well as the facade of the Bank of the Medici there, ⁵ both by Filarete (1457; Figs. 8, 9, 10); then Palace Bologniani, formerly Palace Isolani, in Bologna (1454) with round arched porticos, above these being pointed windows and a console cornice with shells; Palace Marliani, unfortunately destroyed in the year 1782 (Fig. 11), from an old copper engraving published in the work mentioned below, ⁶ with pointed windows between pilasters and other additions, all of which breathes the grace and the entire caprice of the Renaissance; further House Casa Trovatelli in Pisa (1450), Palace Vitelleschi in Corneto ⁷ (Vitelleschi died at Corneto in 1440) with its two massive Gothic tracery windows and its antique detail forms on doorways and windows, and the console cornice (Figs. 12, 13 a, b, c, 14); the court of Palace del Commune in Ancona (1470) with pointed arcades and angle columns on the massive piers, with palm capitals on the pilasters, which in their details permit the early Renaissance work to appear; therewith also the archivolts of the pointed arches are treated like the antique. -- the whole being a work of Francesco di Giorgio. Likewise the Loggia dei Lanzi of Oragna (1380; Figs. 15, 16, 17), which again allows the round arches in great dimensions to enter into their rights, ‡ might designate as precursors of the Renaissance movement, as well as the court of Palace Doge at Venice (1505), where round and pointed arches occur over and beside each other, with round arches in the ground story, pointed arches in

the second, above these being again round arches. Finally is to be mentioned yet Palace Rector in Ragusa, commenced by La Cava and completed by Orsini (1435-1465), as a very interesting example.

Note 5. From Oettingen, W. von. *Traktat über die Baukunst des Antonio Averlino Filarete*. Vienna. 1890. p. 681. Also Cassina, F. *Le fabbriche piu cospicue di milano*. Milan. 1840. The portal is now built into the Castle at Milan.

Note 6. Müntz, E. *La Renaissance en Italie*. Paris. 1885.

Note 7. From Boffi, L. *Il Palazzo Vitelleschi in Corneto Tarquinia*. Milan. 1886.

The preceding buildings mentioned may be regarded as important representatives of the transition style; it is self-evident that these do not exhaust the series of examples. But they may suffice to illustrate what the transition style was able to create.

5. New Art.

After these preliminary steps, there was only necessary the guidance of a man of genius, of a great work by him, in order to produce a permanent worth for the innovation, and to make it standard everywhere. This was produced by Filippo Brunellesco with his design and execution of the Cathedral dome at Florence.

The effect of this work is most readily characterized by the letter of the best man in that highly gifted time, of the great Leon Battista Alberti to Filippo di Ser Brunellesco, in which he prefixed to his Treatise on Painting as a preface and a dedication to Brunellesco.⁸ He says:--

Note 8. Compare the translation and the Italian original in Janitschek, H. *Quellenschriften für Kunstgeschichte*. Vienna. 1877. p. 46-49.

// "Amazement and sorrow should be aroused in one at the same time, that so many splendid and illustrious arts and sciences, that according to the evidence of history and of the still visible works, that stood in such grandeur among the ancients, so highly gifted by nature, so seldom exerted at present, indeed almost entirely lost. Painters, sculptors, architects, musicians, geometers, rhetoricians, soothsayers, and similar noble and wonderful geniuses are now found very seldom, and

(then) are to be praised but little. Thus I thought -- and many things justified me in these thoughts-- that nature, the mistress of all things, had already grown old and wearied, that she brought forth as few giants as great minds, such as she had done in her (equally) more youthful and more famous times in wonderful abundance.

But then, when after a long banishment in which we, Alberti, had grown old, and I had returned to our mother country, distinguished above all others, I found that in many and especially in thee, O Filippo, and in our very intimate friend Donato, the sculptor, and in those (others), Nencio, Luca and M Masaccio, there lived a spirit, capable of all famous acts, and which was to be placed as inferior to none of the ancients, however famous he may have been in these arts. But now I saw always, that it is not less a matter of our industry and our care, than a gift of nature and of the time, to deserve in any such matters the fame of aptitude. Hence I avow to you, that if to those ancients with the actual abundance from which they could learn and imitate, it was less difficult to attain to the knowledge of those highest arts, whose practice is now so toilsome for us, therefore also our fame must be the greater, if without instructors and without models, we originate arts and sciences, of which men had before seen and heard nothing. Who might be so proud or envious as not to praise the architect Pippo (Filippo), when he sees his building here, so mighty, towering to heaven, large enough to cover with its shadow all the people of Tuscany, and erected without the aid of wooden centering; according to my opinion an art work perhaps as little known and possible to the ancients, as its erection appears inconceivable at the present time. Yet there will be another place to speak of thy superiority and of the abilities of our Donato and of the others, so dear to me by their characters. But go thou as strongly as thou canst, devising day by day things, by which thy amazing genius may inherit eternal name and fame, and if leisure ever occurs to you, it would rejoice me, if you would read this, my little work on painting, that I dedicate in Tuscan speech to thy name" -- etc.

He closes the letter with the modest saying:--

13 "Never was an author so learned, that cultured friends were
14 not of the greatest benefit to him", and he requests any possible improvements.

Note 9. See Note 7.

15 In the first half of the 15 th century, the great Brunellesco under Cosimo I sets the Roman column in place of the Gothic pier (See Chapel Pazzi; 1470); he makes Tuscany the focus
16 of the Renaissance movement. He arouses the feeling for beautiful proportions of the stories, and with Michelozzo he introduces a regular graduation of the rustication, the windows, and the members of the cornices, which progress the Sienese again extended, especially in the forms of the cornices and their relation to the whole; in the treatment of the capitals, they even excelled the Florentines.

6. Early and High Renaissance.

Thus the development of the architecture of the Renaissance was particularly based on the work of some masters of the highest rank. ¹⁰ In the time of seeking, the first period from 1420 to 1500, (Early Renaissance), there are Brunellesco, Michelozzo and Alberti. The Triumphal Arch of Alfonso I in Naples, the main portal of Castle Nuovo, the work of Pietro da Milano, was the earliest monumental structure of the Italian Renaissance, on which -- certainly only for a particular case -- the architecture of ancient Rome was frankly employed. (Fig. 18 and Note 11).

Note 10. Also see Burckhardt, J. Der Cicerone. 7 th edition. Leipzig. 1898. p. 300 et seq.

For from the Renaissance of Brunellesco and his school in this connection, this is entirely apart; their aim was not the "revival of the antique", but the use of its forms for the artistic animation and covering of entirely independent conceptions. Therefore we also seek in their creations in vain for any intimate connection with the organism of Roman buildings, or even for the endeavor to revive them again verbatim. L. B. Alberti was the first, who established and recorded the rules of antique architecture with the view of a conscious renewal of its entire organism and artistic nature.

¹¹ In the second period (1500-1540), the golden time of the Renaissance (High Renaissance), the age of harmony between p

principal and detail forms and of decoration restrained within its limits, it was the great Bramante from Urbino and his pupils.

Note 11. See Fabriczy, C. von. Filippo Brunelleschi. His Life and Works. Stuttgart. 1892. p. 39 et seq. Also see the separate reprint of his essay on the said Triumphal Arch in the *Jahrbuch der königliche Preussische Kunstsammlungen*. 1899. Heft 1, 2.

About the middle of the 16 th century, Michel Angelo Buonarroti, the greatest of the Florentines, equally great as painter, sculptor and architect, assume the leadership; with him subjectivism in art reached its climax. Then followed the academic period with its chief representatives, Serlio, Vignola and Palladio. With Domenico Fontana, a follower of those mentioned, the art terminated with the 16 th century.

18 7. Barocco.

Eventually the art of Michelangelo attained supremacy, and the masters of the then commencing Barocco style, Bernini and Borromini, reached the head, followed in the 18 th century by Juvara (1685-1735) and Vanvitelli (1700-1773), the two greatest architects of this age.

However men may judge Bernini, his porticos around the Place of S. Peter in Rome (1617) will always remain a dignified work of grand effect, and certainly no one will deny a certain grandeur in appearance with comparatively good detail forms to the Fountain of Trevi, executed after his design by Nicola Salvi (1735-1762), even if the whole has a somewhat theatrical conception.

The broken and prominent pediments, extending in all directions, twisted columns, strong reliefs, and the resulting more vivid effect of the shadows, became for church buildings characteristics of the style, as well as the fact, that from the decoration was required the expression of power and passion, that men sought to obtain by repetition and dryness, but by this the eye was blunted for all more refined forms.

Yet with all this blame, the fine words of Burckhardt should not be forgotten:-- "Barocco architecture speaks the same language as the Renaissance, though a less civilized dialect of it"-- and elsewhere:-- "Also contempt for this style will

not be found among cultured architects. They know very well how to distinguish the intention from the expression, and they sincerely envy the artists of the Barocco style the freedom enjoyed by them, and in which they could sometimes become grand.

Already earlier R. Redtenbacher in his deserving work,¹² occupied himself with the nature, characteristics and the question of the origin of the Italian Renaissance, and he came to the conclusion, that four elements produced it.

- a. Roman methods of construction.
- b. Antique columnar orders (introduced by Barocco ?).
- c. Naturalism in sculpture.
- d. Naturalistic ornament besides the antique.

Wherein the chief was and remained the Roman methods of construction, in contrast to the Northern Renaissance, that retained the mediaeval system of construction, adorning this with the ornamental forms of the Renaissance.

Note 12. Redtenbacher, R. Die Architektur der Italienischen Renaissance. A manual and handbook for architects and friends of art. Frankfurt. 1886. p. 61.

The first great work in the domain of construction by Filippo Brunellesco, one of the founders of the Renaissance, the design and erection of the dome of the Cathedral of Florence, has no concern with the Roman art of vaulting, it rather depends on the Baptistery at Florence; neither on Palace Pitti nor on the Cathedral of Florence has he acted as a master, called to extend the good antique orders. Naturalism in sculpture had already been adopted by Niccolo Pisani, and naturalistic plant ornamentation had previously been employed by the Greeks of the Alexandrine age, and by the Romans of the imperial period. I gave expression to my researches on the existence of the Renaissance in the edition of 1902, by saying that mediaeval architecture also still had its natural and honorable part in the birth of the Renaissance in Italy.

¹⁹ Without opposition must have been the continuance of the Renaissance movement after Brunellesco,¹³ Michelozzo¹⁴ and Alberti,¹⁵ by the three masters Giuliano da Majano (1432-1490), Benedetto da Majano (1442-1497) and Simone Pollajuolo (1457-1508), called Cronaca.

Note 13, 1379-1466; Note 14, 1396-1472; Note 15, 1404-1472.

The question was also taken up later by von Geymüller in his Essay; "Friedrich II. von Hohenstaufen and the beginnings of the Renaissance in Italy. -- Munich. 1908".

For him the beginning at the Florentine Cathedral commenced with Arnolfo di Cambio, begun in 1296, according to W. Bode.

For myself, it makes itself already apparent in the works of the Cosmati on the Baptistery and at S. Miniato.

The cradle of the Renaissance was in Sicily at the court of the Hohenstaufen emperor Friedrich II. Its "ideal sources" are the works of Niccolo Pisani and the Renaissance in Gothic garments" until the time of Brunellesco. In it dwelt three souls:-- 1, that of Grecian-Roman antiquity; 2, that of Christianity; 3, that of the Northern peoples. It is a union of Northern and Southern ideals, a fusion of the attainments of both. (Faust and Helena?).

To this conclusion had I come independently from my deceased friend, H. von Geymüller, already before the year 1902. We both firmly adhered to it.

However, he based this on the Frenchman A. Bertaux,¹⁶ who stated elsewhere, that the works of the imperial school were divided into the imitation of the French (Gothic) and of antique art. Bertaux also allows that Niccolo Pisano was born in Apulia, and with his father was sent to Tuscany to build the Castle in Prato.

Note 16. Bertaux, A. *L'Art dans l'Italie meridionale*. Paris. 1904. I.

In Italy appeared the first recation against the Gothic, or its transformation in the sense of the antique. The first direct transition from Romanesque to Renaissance is recognized by Geymüller (in the previously mentioned Essay) Sect. 6) on the Baptistery at Pisa. The period of the Renaissance in Gothic garments extends from Friedrich II. to Brunellesco, from 1250 to 1420. Men did not desire the Northern Gothic, but only its alphabet, to express Italian ideas. "There was in Italy as good as no Italian style, but rather only a Gothic fashion of the Renaissance". (In the before mentioned Essay, Sect. 7, p. 23). Instead of the pointed appeared the round arch. In contrast to the Gothic, the Renaissance became a

world style, because it understood how to combine the horizontal and vertical modes of composition.

Section II. Origin and Extension of the Renaissance, its Masters and Architectural Works.

8. Survey.

What is to be presented in this Section, is not the history of the labors and works of the individual architects of the Renaissance -- this may be read in Vasari and others -- it will not be a history of architecture arranged according to the masters, and praising their works, but rather collecting together what they have left as a whole, whereby the museums and archives with their treasures may pass somewhat into the background; only architectural ideas embodied in stone appear to us as in the first line fruitful and worthy of consideration. Saxa loquuntur. (Stones speak). The executed works shall speak.

That not always was the highest conception or the ideal embodied -- otherwise nothing would exist, -- that so many miscarried by the obstinacy of the owners, others by envy, bad times and unfavorable conditions, or on account of small means were not erected, or were stunted in execution, we all know this as well as, that frequently the holiest inspirations only see the light of the world on paper, then to vanish as materials treasured in portfolios, or to hereafter give evidence of what an artist soul feels, blest by God, but who could not or must not complete.

So was it then and so is it today, and scarcely was an architect ever permitted to exhibit in stone to the world, how lofty was the flight of his imagination and his ability in solving the great problems placed before him!

And yet we should not omit to give their names, what they created, what is told of them, yet without an entire completeness.

9. Duration of the Lives of the Masters.

The many-sidedness and the creative powers of the Renaissance artists, who with a good general education were almost always painters, sculptors and architects at the same time, many of them also being authors, mathematicians and military engineers, must very greatly astonish us, and therefore raise the question, what duration of life was granted them by Providence? The answer is given by the following list of masters,

for which we may further assume as known, that none of those mentioned spent the last years of his life in the condition of a modest pensioner. Basmarck said, that they all died in the harness like a good horse. Their employers also did not throw them on the scrap pile early (poverty); they were allowed to mature and utilize in art their experiences in a long life.

The briefest length of life is shown by Raphael and Giulio Romano at 37 and 48 years; the longest by Fra Giocondo, Sansovino and Michelangelo at 99, 91 and 89 years old. The average length of life of the Renaissance architects is between 69 and 70 years, an age that also the specialist artists of our time are accustomed to reach, with a much smaller extent of their abilities, and when they come to a rest at the proper time. ¹⁷

Note 17. A complete and very industriously collected list of the architects of the Architecture of the Renaissance in Italy with their works is given in the textbook and manual by R. Redtenbacher, "Die Architektur der italienischen Renaissance". (Frankfurt-a-M. 1866). p. 383-451. To this is further added a chronological list (p. 452-508), an index of names (p. 509-538), a list of facts (p. 539-540), and finally an index of places (p. 541-568); together these indeed compose the most important half of the contents of the work mentioned. Materials are there collected with much zeal and industry, that make a survey possible.

To that extent of 185 printed pages I must not and cannot extend the enumeration of the masters in this volume, and in naming their works, I must restrict myself to those, that have given fame to the master. Thus I more gladly refer to the work of Redtenbacher, since it was originally intended for the Handbuch der Architektur.

The reference made in Note 17 requires an explanation and a brief analysis. Not always are the names of the architects certain and confirmed by documents, that are connected with the architectural works of the Renaissance in Italy. What has been already attributed to some one of the great men, has again been taken from them by research. There was a time in which Brunellesco, Bramante or Michelangelo was made responsible for every work of art, that appeared well; men would have

their names in the smaller towns, and I still recall with pleasure, when a custodian in the Cathedral at Siena said to me with all sincerity, while I sketched a holy water stoup:-- "Work of Phidias".

We shall not blame the people for this, but now a reaction has commenced, which seeks to deny piece after piece to the previously revered great men, and to us it seems just as dangerous, as the former procedure, especially when nothing certain can be adduced. What now occurs in "naming the paintings" in our great galleries at this time, is likewise experienced by the architectural works.

10. Determination of the Monuments.

For the determination of the monuments, the following are available to us. 1, oral traditions among the people; 2, written evidence by contemporary writers (chroniclers); 3, documents in the form of inscriptions on buildings, notes, building contracts, settlements and accounts, and 4, comparisons of works of doubtful origin with those of attested masters.

For me, receipted accounts are alone infallible, as well as decrees and contracts, assuming that the latter were actually executed, which cannot always be attested.

It is not my intention to go into detail in the series of considerations into which, I believed I must go out of the way in this work. Still it might be erroneously explained, if I had retained without explanation the well known old names of the masters -- for lack of better -- for the principal works, and believed that I must discard the new persons.

A few examples must suffice here. As a spite of fate is it represented, that to the great Bramante works have been ascribed by tradition and also by many learned men, in which he had no part. On the other hand, L. B. Alberti suffered from them, since he once wrote:-- "To preserve this reputation, the architect must give his models himself, never have them made by others", -- which had the result, that the greatest part of the buildings designed by him were attributed to the executing master mason or stonemason. A first attack on Bramante was made by Count Domenico Gnoli in an essay in "Archivio storico dell'Arte (1892) under the title:-- "La Cancellaria ed altri palazzi di Roma attributa a Bramante", and a second in

the "Revista d'Italia" on April 15, 1898; in both articles he denies to Bramante his claim as the master of the Cancellaria in Rome. He asserts, that no contemporaneous writer stated the Cancellaria and Palace Giraud to be works of Bramante -- Vasari excepted -- and even he but conditionally, for he attributes to him only a participation in the conferences on the erection of the Cancellaria.

Titì (Guidi di Roma) wrote in 1686 of the Cancellaria:-- "Building of Sangallo"; Rossini (1693), "building of the Sangallos"; Martinelli (1761), "building of Bramante, or as some prefer, of Sangallo"; Fonseca (1743), "building of Bramante and of other excellent architects", adding to this, "the principal facade by Vignola" -- hence the tradition is not for Bramante. Yet also not entirely against him.!

12 Documentary evidence for or against Bramante's authorship of the Cancellaria has not been obtained by researches in the family archives of Riario in Naples (the owner shown by an inscription), so that we stand here before closed doors.

Still others have offered other evidence:-- in the "Rassegna d'Arte, Milan, 1901, Ettore Bernich, on the ground of a recently discovered letter, but which according to the opinion of Fabriczy does not concern the Cancellaria, but the House of Riario in Naples, the miniature painter Gasparo Romano is given as architect of the Cancellaria, but this was denied by Gnoli. Therefore Gnoli makes known, that he found a note of May 15, 1496, given for the delivery of lime and wood, drawn by the architect Bastiano da Bologna, engaged in the erection of the Cancellaria, whereby he proved himself to be the master of the work.

That is indeed rather little for proclaiming him as master of such a work.

Yet what do the well known inscriptions on the building tell us, two of which still exist? One is cut in great letters on the frieze above the ground story and runs:-- "Raphael Riario, Savonense, Cardinal S. George, S. R. E. Chamberlain to Sixtus IV, Pontifex Maximus, reputed for honors and wealth, dedicated a temple to the divine Laurence the Martyr, the building founded at his own cost in 1495. Alexander VI, Pontifex Maximus". It names 1495 as the date of erection.

The other was found later over the middle window of the ground story, on a rectangular tablet concealed under the arms of Leo X or of Clement VII and states:-- "R. Cardinal Riario, great grandson of Sixtus IV. and Chamberlain, erected this building. A. D. 1489". (Ciacconico indeed gives 1569 for this, but it may be caused by an error in writing).

The building must then have been chiefly finished about the end of the 15 th century, even if Ferriero also gives the year 1512 as that of its completion.

Bramante was born in 1444 and died in 1514, and he was therefore at the best age in the fifties, at the height of his artistic creation, when the inscriptions were placed on the building. Vasari -- whom Gnoli characterizes as "a very safe guide in all arts of the 15 th century at Rome" -- states, that Bramante first came to Rome about the year 1500, after the fall of Moro in Milan (1499), whereupon Gnoli follows, that since Bramante only came to Rome in 1499-1500, the building of the Cancellaria could not have been done by him. Others draw from this the conclusion, that if Vasari be unreliable, then must the settlement of Bramante be assumed somewhat earlier, or even as in many other cases, that he did not make all his designs at the place of their execution. To this view is inclined Le Tarouilly.¹⁸ (Text, Note on page 220). -- "From all these considerations, I would then be led to believe, that his arrival at Rome was before the year 1500". Redtenbacher allows him to make the design for the Cancellaria in Milan before 1492, its execution being assumed by Antonio Montecavallo, according to Vasari. -- Also the treatment or or method mentioned under 3 accordingly denies it. If we now make the comparison indicated under 4, then the result indeed shows in favor of Bramante, but this is a matter of seeing and perception, not to be grasped by every one, especially what concerns the form of the details. The entire ornamentation still in many places recalls too strongly the sculptor's works of the second half of the 15 th century in Rome.

Note 18. Le Tarouilly. *Edifices de Rome moderne*. Paris. 1859.

The name of Bramante is dropped for the Cathedral in Como, since it nowhere appears in the building documents, and Rodari

has cut his name on the stones of the building; likewise S. Maria della Grazie in Milan and Palace Giraud in Rome should no longer belong to him, but on the contrary, S. Satiro in Milan and the Building in Abbiategrasso should remain to him. (See Gotthold Meyer, H. Strack and Santo Monti). From the earliest time of the appearance of Bramante in Rome date a number of buildings, which all exhibit the same artistic handwriting. Here should perhaps be counted-- from the year 1500, the House No. 653 Via del Governo vecchio with the inscription; "I, Petrus Tarcus, by apostolic letters, written and dictated, built this in the year 1500"; then the House No. 524 Via dell'Orso, and further that of the Notary Sander with the inscription: "I, Sander Northusanus, Notary of the Rota, erected this in 1506, etc." Besides the Cancellaria, I take also Palace Giraud, which was still unfinished in 1504, was given to the English Embassy by the Pope. The Tempietto in S. Pietro in Montorio, completed in 1502, the court of S. Maria della Pace (1504), and the great Vatican court buildings begun after 1506, have a different stamp. Those first mentioned exhibit as a criterion the beautiful alternation between openings and masses with the most refined and inspired treatment of detail forms. Not incorrect are the observations of Gnoli, when he again recognizes on the pilasters, cornices, windows and balconies the same art and mode of treatment, which occurs on Gate S. Agostino, on the choir of Chapel Sistine, on S. Giacomo and the Anima, on the different altars and tombs in the churches in Rome from the second half of the 15 th century. Nowhere are to be found there the indeed elegant and yet bold profiles and the living ornamental forms of the buildings of the 16 th century, that Bramante by experience brought into use on the Tempietto and in the court of S. Maria della Pace, but instead is a very refined, quiet and flatter treatment of detail forms. And if on the ground of this fact, one comes to the conclusion:-- "Palace Cancellaria is the most refined product of any Tuscan and 15 th century art, that Bramante destroyed, supporting the Roman art of the 16 th century", one may well understand this. But it should not be overlooked, that the Cancellaria and Palace Giraud give the rhythmic bay and the germ of the colossal order, and

have freed themselves from the Tuscan arrangement of the window sill course, as the sole subdivision of the wall masses or the stories in the development of the facade. Therefore it might well be permitted to regard the palaces mentioned not as indications of a dying art epoch, which in the last struggles of the fight against death makes fruitless endeavors to recall the vanished life forces.

Gnoli says, that the Cancellaria is a last result of the endeavors of Alberti in the domain of Tuscan palace architecture of the early Renaissance. But if the organism of Palace Rubellai is regarded as identical with that of the Cancellaria, this is then but conditionally correct. The course of things in general was not maintained in building, for the change must be completed. And when Gnoli at the close of his statements, which may have a convincing effect, puts the question:-- "But who was then the architect of the Cancellaria? That question will be discussed in another study"; we can only say:-- "Then is a need for waiting", until the name of the master is found, who is appointed to shine as a new star among the many in the sky of art in Italy. If for the Cancellaria is lost the name of Bramante as architect, then this is likewise lost for the entire group of attributed Roman buildings.

If others accept in spite of the fate mentioned, and now refer all buildings ascribed to Bramante to the architectural models of L. B. Alberti or of Luciano da Laurana, then will we also leave this at first to those concerned, and also have nothing against it, if since 1895 for the coffered ceiling in S. Maria Maggiore attributed to Sangallo by Vasari, Alberti is credibly made its designer.

And yet a second:-- in the little work of Dr. Paul Wenz, that appeared in Berlin in 1901:-- "The dome of the Cathedral of S. Maria del Fiore at Florence", which is readily recognized as a solid and interesting work, is found a rescue of the honor of Ghiberti, which can only be pleasantly treated, "for both theoretically in his architectural treatise as also practically in his models of the years 1418-1420, and in the treatment of the architectural backgrounds of his bronze reliefs, Ghiberti showed himself as an architect of the most refined

understanding". But give the emperor what belongs to the emperor and to God his own -- Ghiberti would never detract from his part in the matter, but when Alberti in his letter (page 9-14) to Brunellesco praises the latter as the architect of the building, and loads him with the highest praise, he then indeed expressed public opinion, and we believe him.

A rescue of the honor of a master of the 14 th century in regard to priority of dome construction for Italian churches, I have already expressed, and have again confirmed it in this book.

Further, absolute certainty, documentary proof, that Brunelleschi built Palace Pitti, does not exist. Not even the year of its erection is assured. Therefore 1440 is assumed, but from 1440 to 1443 all documentary mention of Brunellesco is wanting.

Palace Medici (Riccardo), begun in 1430, was either by Brunellesco himself, or was built by Michelozzo after plans of the former. Likewise here is nothing positive.

R. Redtenbacher (p. 89) asserts, that for Cronaca, it is only authenticated by documents, that he was paid for his work by the administration of the Florentine Cathedral and that of S. Spirito. When he returned from Rome to Florence is not determined, nor the time when he furnished Palace Strozzi with the main cornice, and when he built the court there. It is not even impossible, that he himself designed the plan for this in the 32 nd year of his life, and not Benedetto da Majano.

But according to Raschdorff ¹⁹ however, Benedetto da Majano began the building, for which the corner stone was laid in 1489. According to him and to Redtenbacher, the building in 1491 was at the height of the door knocker -- thus only at half the height of the ground story -- but however, Cronaca executed the court and the height of the main cornice, that already in the time of Vasari caused astonishment by its great projection and its peculiar construction. Redtenbacher says, that it was imitated from a part of an antique cornice found near Spogliaacristi in Rome, but was enlarged in proportion to the facade. That we have to do with the imitation of a normal Corinthian cornice with consoles and dentils, egg-

and-dart mouldings, coffered soffit and cyma indeed requires no explanation. But attention may at least be called, that it concerns only a portion of the antique main cornice, with corona and frieze, the latter in very modest form, but with a correct feeling for construction, the architrave is suppressed, and gives place to a bold round. That is novel, an advance and a merit of the master, as well as the fact, that he harmonized the height of the cornice to the total height of the mass, the three stories together, and not to the uppermost story in the antique sense.

Note 19. Raschdorff, J. *Palast Architektur von Oberitalien* etc. Berlin. 1883.

In the year 1504 the Palace was half completed and only 25 years after Cronaca's death -- thus in 1533 -- was the building finished, but without the construction of the famous cornice around it. Therefore it was not allotted to Cronaca to carry the building to completion, although Vasari states the contrary. Must ther Cronaca be assumed as the master of the construction of the cornice? In the great work on Tuscany of von Stegmann and von Geymüller, Giulio da Sangallo (1445-1516) is designated as the designer of the building on the ground of the wooden model of the building and of the building accounts published by Jodoco del Badia.

According to the statement of the latter, the structure was so advanced, that in July of 1500, the consoles of the main cornice were set on the side next the Mercato Vecchio, and on Sept. 15 th of the same year this part was completed; thus Giuliano da Sangallo outlived his colleague Cronaca by about 8 years. The latter also thus had the good fortune to test the effect of his main cornice, and Vasari was correct.

For the activity of the Tuscans in regard to their social positions and their architectural works, reference is made to the great work on Tuscany, which fails in very few cases. For the lives and works of the three greatest masters of the Renaissance in Italy, the researches of H. von Geymüller in his work on the original designs for S. Peter in Rome, and his great work on Bramante, chiefly finished before his death, (that will be published after no long delay), are still determinative, and on Brunellesco's life and works, that of C. von

Fabrisky (Stuttgart. 1892). "Michelagnolo Buonarroti als Architekt" by H. von Geymüller was prepared from the new sources, and it appeared as a separate reprint of the monograph on Michelangelo from the work on "Die Architektur der Renaissance in Toscana" (Munich), so that this basal work is also made accessible to wider circles. We have move over a ground not yet thoroughly exhausted by research. Study of the archives may yet bring to light much, whereby some still obstinate opinions may yet be overthrown.

And when H. Wölflin says in his small book, "Renaissance u und Barok" (2 nd edit. Munich. 1907):-- "It is the duty of the history of artists to enumerate the entire wealth of the creative arts, and to trace out individualities in detail", I may not contest this, but for us this tracing is at first of no use. We could perform this only briefly or superficially, and in this case would attain to clarity as little on the question of the nature of the changes in style, as the historians of art and artists do. On account of simplicity we shall rather attempt an arrangement of Renaissance and Barocco architecture according to the sequence of their works, in which we refer to R. Redtenbacher, mentioned in Note 17, and to Giorgio Vasari. The deciding judgment and the "wherefore" in architectural matters will not be discussed in words outside existing facts, and so not with doubtful suppositions, never thought of by the executing artists. It is certain that in his plain knowledge of construction the builder Brunellesco says more to us on the ground for the form of his cathedral dome, than another, born later, would be able to do in resonant words.

Otherwise it will not be forgotten, that the end of our art period nowhere and at no time abruptly terminates, that rather transition steps exist everywhere at the beginning of a new one. The masters of such a time may thus belong to the dying and the newly reviving mode, and will be judged accordingly. Not always are the limits easily drawn.

Is it actually necessary to classify and dispose in epochs of everything occurring in the domains of art, the varied phenomena and changes of a style everywhere? Growth, flowering and decadence are to be recorded at all times, and will always

recur on our earth. The transitions are completed earlier for one creation, for another being later, more or less abrupt. This remains uniform for the whole. It is really absolutely necessary for the course of history to place one master in epoch A and the others in epoch B or C? Do all the welfare and woe of writing the history of art and the estimation of works and their masters depend on this? Does everything in art proceed in an unbroken smooth inclined plane upward or downward? Are there no offshoots or derailments? Who are then the rulers of creations, who desire to demonstrate, that this or that art work is better than another, or which is alone correct? How much of this goes to the account of coteries, of fashion, of exaggeration, or of reciprocity?

Does anyone really believe that Palace del Consiglio in Verona is less beautiful, since Bernesconi took it away from Fra Giocondo and assigned it to the Veronese Rizzo, or that the Pantheon of Agrippa has lost something of its structural worth, since it has been attributed to Hadrian? Scarcely, I believe. Also is the Palace court in Urbino not more beautiful to me, since we know with certainty, that one should in future seek in the structure for "High Renaissance"?

Are subdivisions everywhere necessary? Perhaps one would do better like Wölflin, to go through the Renaissance movement to the Barocco, and to treat this by itself, in which one should not forget, that its occurrence denotes a sequence and not something absolutely novel.

11. Epochs of the Renaissance.

In the first edition (1903) of this book, following the example of Burckhardt (Cicerone, 1st edition. Basle. 1860), the first epoch of the Renaissance in Italy was designated as Early Renaissance, the second as High Renaissance, and to a third were referred the works of artists from 1540 to 1580 -- "the time of the great theorists, Vignola, Serlio, Palladio and Scamozzi" -- and to a fourth were removed the Barocco masters and their works.

The first epoch (1420-1500) is characterized by Burckhardt as the time of seeking. In it the love of ornamentation in the arts in general came to be expressed, which also continued in architecture. The time of seeking? Yes, but would any

one wish to recognize a particular love of ornamentation on
 27 Palaces Pitti, Medici, Strozzi, Gondi or Rucellai in Florence,
 or on Palace di Venezia in Rome? Only on church buildings d
 did such appear, but not on secular structures. Moreover is
 the Early Renaissance in Lombardy and Venetia totally differ-
 ent from that in Tuscany! As leading masters are named Bru-
 nellesco, Michelozzo, Cronaca, Alberti and Laurana.

The second epoch extends to the year 1540 -- "the golden
 age of modern architecture" -- that lays its stress on "simp-
 le greatness". Indeed without contradiction. Its represent-
 atives are Bramante, Raphael, Giulio Romano, Sangallo and Pe-
 ruzzi in Rome, Sansovino in Venice, Baccio d'Agnolo in Flore-
 nce, Sanmicheli in Verona, Falconetto and Ricci in Padua, and
 Michelangelo (1475-1564) belonging to this and to the follow-
 ing epoch.

The buildings of the third epoch differ somewhat in charac-
 ter from those of the second. They are rather intelligent
 than imaginative productions, that exhibit pure but cold det-
 ails, safe but nothing abnormal. They are based on study, r
 refined understanding and good taste, that are peculiar to a
 antique Roman architectural works aod are correctly understo-
 od. The great master of this epoch remains Vignola with his
 buildings and their details, in a manner classical. The ser-
 ies here closes with the great Andrea Palladio, dignified and
 averted from the offered enticements to the freest manner of
 design in architecture by the architects of the succeeding
 time.

12. Barocco Style.

The fourth epoch begins about the year 1580. The stylistic
 mode of expression on the buildings of this time is designat-
 ed as Barocco, and the style itself as the Barocco style. Its
 Franco-German end is called the Rococo, not occurring in Ita-
 ly, England or the Netherlands, with very few exceptions. "It
 is the epoch, that mistreated, omitted or multiplied details".

After the celebrated Bernini, the most influential master
 is Giacomo della Porte, the most extravagant is the Theatine
 monk from Modena, Guarino Guarini (1624-1683), with his build-
 ings in Messina and Turin. With the last representatives of
 the Renaissance movement are counted F. Juvara, L. Vanvitelli

and Nicola Salvi, who moreover desired to know nothing of absurd forms of details, and are to be accepted as austere and earnest masters, as their chief works sufficiently testify, the Superga near Turin, the Palace at Caserta, and the Fountain of Trevi in Rome. While elsewhere the Barocco style restricted itself in the masses and proportions, the Guarini mentioned carried the caprices to a climax. On the works of this master dissenting criticism on the style may in part be proper, on the contrary the native of Trent, Father Pozzo (1642-1705) charms the world even today by his artistic perspective decorations for ceilings and walls, by his masterly execution, while the Bibienas enjoy high recognition for their creations in theatre architecture.

Instead of the four subdivisions of J. Burckhardt, one might also be satisfied with three, as C. Gurlitt prefers, under the names of Early, High and Late Renaissance. And when he places Michelangelo (1475-1564) and Palladio (1518-1580) at the climax of the architectural history of the last Renaissance epoch:-- "Michelangelo, the Titan of individual will", whereby he became the father of the Barocco, for from him proceed the first eccentricities in the Laurentian (Library) and Chapel Medici in Florence -- and "Palladio, the master of internal regularity based on the study of the antique", then might one even be contented therewith. Here Gurlitt says more than his critic, A. Riegel, and various others might have done.

28 If the objection be made to J. Burckhardt, that he treats badly the Barocco style, then must it still be emphasized and remembered, that he again sings the highest song of praise for it (Cicerone, p. 366, 368), which in the year 1860 none else would have ventured. Today have vanished the gods of that time, and more than is required, can artists and connoisseurs in art occupy themselves with the Barocco, the primitive facts of its origin, the meaning of its nature, its characteristic peculiarities etc.

Also see the latest publication of an expression of Jacob Burckhardt in the volume already issued:-- Jacob Burckhardt, Letters to an architect in 1870-1889. Munich. 1913. 10. 6. My respect for the Barocco hourly increases, and I am inclined

soon to hold it to be proper and the main result of living a architecture. It has not only the means for everything, that serves the purpose, but also a beautiful appearance. On this something further verbally". Rome. April 5. 1875.

C. Gurlitt sees in the Barocco the style, which proceeds from a basis like the antique, by a conscious free and modern polyform treatment of the architectural conception and the details leading to an enhanced form of expression, at the end even carried to absurdity. Burckhardt also feels this, and both are allowed to please themselves.

If one represents to himself, that the entire Renaissance style is inorganic, excepting only Tuscan palaces of the first epoch and a part of Roman Barocco palaces, then will he satisfy himself with many deteriorations compelled in the Barocco style, so long as these follow an expressive course. "Where charm exists for the eye, there also lies an element of beauty". And in the Barocco or in the Renaissance in general are solved problems, which never succeeded in Grecian and in Northern Gothic architecture, thus in the purely organic styles". But then the Barocco should be all, what forms its characteristic indications, the style "which may not be derived from the preceding" (sic), which requires so broad and heavy massiveness, that as an essential characteristic bears a picturesque character, (for example Palace Ruspoli or Farnese in Rome?), that masses light and shade as its most particular elements (as if other styles were to be conceived without them), which avoids the marble and almost entirely accepts travertine, "since this was ennobled by the Farnese court, by Michelangelo", but whose street facades consist of plastered brick masonry, and which Bramante indeed by its use on the facades of the Cancellaria and of Palace Giraud did not cast it into the mire, that sensitively avoids the columnar courts, and only appears in pier courts, although Bramante in the court of S. Maria della Pace at Rome might somewhat earlier consider it for itself, which desires to experience everything, who might enjoy the interesting statements of Wölflin, Riegel and others. And when the latter also says, that the Barocco employs too much sculpture for decoration, and in this falls into the same faults as the Gothic, so may one thing

remain for itself, even if there be yet added, "that the aim of the Barocco was of surpassing farsight," whereby he wished to say, that the buildings were calculated for a distant effect, and when it is stated of it, "that the mountains end beneath" (we are accustomed to speak from the foot of a mountain), then may this be noted but incidentally. Time and paper would be too valuable for the enumeration of further tests.

29 We allow it to please us if anyone says:-- The Barocco will seize with power the direct effect; likewise the principle may too properly exist, that from it we momentarily experience a strong effect, but we are soon released with a certain weariness. Whence came the advance and its name and kind we know, even without any ringing of bells. What Michelangelo has erred in eccentric forms will be briefly gathered. What we must ever care for is the clarity and beauty of the mouldings employed. The inserted columns of the Laurenziana are also found elsewhere, for example in Padua and with Serlio, then on the Palace of the sculptor Lioni in Milan, in the portico of the Palace Conservators at Rome etc., even already in antiquity. (See the so-called Temple of Deus Rediculus near Rome). With the impossibility of giving the day, month or year on which one epoch ended and the other commenced, with the certainty that the supporters of such a one did not die with it, this collection of the great houses with the addition of their chief works is arranged in general and not in epochs, but so far as possible in accordance with the working time of the supporter. Hence it can be easily learned in which one of the epochs mentioned the masters should be placed, or in which they worked. In spite of all uncertainties in the statements, and in what is now believed, it may be adhered to in the lack of something better.

Compilation of the Names of the more important Masters and the Architectural Works of the Italian Renaissance.

1379-1446. 1. Filippo di Ser Brunellesco.

Cathedral dome, Chapel Pazzi, Palace Pitti, Foundling Hospital, ⁽¹⁴²¹⁾ Columnar Basilicas S. Lorenzo (beg. 1425) and S. Spirito, all in Florence

1396-1472. 2. Michelozzo Michelozzi.

Medici Bank in Milan (portal), 1457-1470, Palace Riccardi=

Medici in Florence, Chapel Portinari in S. Eustorgio in Milan. Michelozzo was called to Ragusa in 1464 on account of the building of Palace Rector there.

1404-1472. 3. Leon Battista Alberti.

Most important architectural author in the Renaissance. S. Francesco in Rimini, Palace Rucellai in Florence, S. Andrea in Mantua.

1409-1464. 4. Bernardo Rossellini.

Buildings in Pienza, Cathedral and Palace Piccolomini there, as well as Palace Piccolomini in Siena.

-1445. 5. Pietro da Milano and Isaia da Pisa.

Built with others Triumphal Arch of Alfonso at Naples. Entry of the prince in 1443.

1443-1519. 6. Fra Giocondo.

Loggia del Consiglio in Verona.(?). Vasari is silent concerning the builder of the Loggia; Burckhardt places it in the time before 1500; Bernasconi ascribes it to Antonio Ricci from Verona, toward the end of the 15 th century. Editor of Vitruvius and Letters of Pliny.

1485-1522. 7. Tomaso Rodari and Solari as architects of the Cathedral of Como and employed on the Certosa near Pavia.

1432-1490. 8. Giuliano da Majano.

Gate Capuana and Villa Poggio Reale in Naples, Palace di Venezia in Rome (?). Master uncertain.

1442-1497. 9. Benedetto da Majano.

Portico of S. Maria delle Grazie near Arezzo (?).

1457-1508. 10. Simone Pollajuolo, called Cronaca.

Main cornice of Palace Strozzi and Palace Guadagni at Florence.

1445-1516. 11. Giuliano da Sangallo.

S. Maria delle Carceri at Prato, Palace Gondi at Florence, porticos opposite Foundling Hospital there. In 1466 also engaged on the Certosa.

1410-1479. 12. Antonio Averlino, called Filarete.

Architectural author (Treatise), Palace of Bank of Medici in Milan, described in his Treatise. Hospital Maggiore there, and bronze doors for S. Peter in Rome.

1447-1522. 13. Giovanni Omedeo (Amedeo).

On Aug. 27, 1522, died of old age at 75 years. (See Mal-

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Malaguzzi Valeri, p. 281). Chapel Colleoni at Bergamo, also employed on the Certosa near Pavia as architect and sculptor. Dominated all Lombard architecture for a long time.

1439-1502. 14. Francesco di Giorgio.

Fortress architect in Siena; engaged in Urbino and Gubbio on the buildings of Federigo di Montefeltro, and on Palace del Comune in Ancona, made the model for Church Madonna del Calcinjo at Cortona.

1450-1492. 15. Baccio Pontelli.

Colleague of Luciano Laurana in Palace of Duke at Urbino and Gubbio, later very busy in Rome under Sixtus IV.

1468-1482. 16. Luciano da Laurana.

Not proved architect of Palace in Pesaro, but chief architect on the Palaces in Urbino and Gubbio, also named as builder of the pleasure Villa Poggio Reale near Naples. Rochetta near Pesaro.

1442-1522. 17. Ventura Vittoni.

Madonna dell'Umiltà at Pistoja. The dome by Vasari.

1455-1534. 18. Antonio da Sangallo.

Church S. Biagio in Montepulciano.

-1480. 19. Martino Lombardi.

1481-1489. 20. Martino Lombardi.

1504-1516. 21. Santi Lombardi.

School S. Marco, S. Zaccaria, S. Maria dei Miracoli, Palace Vendramin Galergi, Palace Corner Spinelli, in Venice, S. Giustina in Padua.

1444-1514. 22. Donato d'Angelo, called Bramante.

Architect of many buildings in Upper Italy; S. Maria delle Grazie (?) and S. Satiro in Milan, S. Maria della Pace, Tempietto, cancellaria and Palace Giraud, Palace Vatican and S. Peter in Rome. (Not all buildings attributed to him are certain).

1283-1520. 23. Raphael Sanzio.

Engaged at the Vatican and S. Peter, chapel Chigi in S. Maria del Popolo, Villa Madama near Rome, Palace Pandolfini in Florence, private Palaces in Rome.

-1506. 24. Giovanni Dolcebuono.

Atrium of S. Maria near S. Celso in Milan. Commenced in 1490.

1498-1546. 25. Giulio Romano.

Villa Madama near Rome, Palace Cicciaporci in Rome, Palace del Te, his own House and Palace di Giustizia in Mantua.

1476-1551. 26. Girolamo Genga.

Palace in Pesaro, Palace Bishop in Sinigaglia, new portion of Villa Imperiale near Pesaro with terraces and gardens.

32 1446-1523. 27. Baldassare Peruzzi.

Palace Farnesina, Palace Ginotta, Palace Pietro ed Angelo Massimi at Rome. Architectural author.

1486-1570. 28. Jacopo Tatti, Sansovino.

Palace Corner, Casa Grande, Library on Piezetta, Scala d'Oro, Loggia at Campanile in Venice.

1482-1546. 29. Antonio Giovane Sangallo.

Palace Farnese (except main cornice) in Rome. Cornice by Michelangelo.

1460-1548. 30. Baccio d'Agnolo.

Palace Bartolini (Hotel du Nord) and Palace Torrigiani in Florence.

1475-1522. 31. Sebastiano Serlio.

Bolognese. Pupil of Peruzzi. Architectural author. Of special value is his Work on Architecture (1537-1540). Venetian edition; books I-VII. 1534.

1458-1534. 32. Giovanni Marino Falconetto.

Palace Giustiniani and Gate S. Giovanni in Padua.

-1533. 33. Giovanni Dosio.

Palace Larderel and Chapel Gaddi in S. Maria Novella in Florence.

1484-1559. 34. Michele Sanmicheli.

Cathedral in Montefiascone, Palace Canossa and Bevilacqua, Chapel Pellegrini and City Gates in Verona, Zara and Sebenico.

1475-1564. 35. Michelangelo Buonarroti.

Architect of S. Peter in Rome, model of dome, sacristy and library of S. Lorenzo in Florence, rebuilding of Capitol in Rome. Plans for Palace Conservators.

1507-1578. 36. Giacomo Barozzi da Vignola.

Vineyard of Pope Julius near Rome, porticos near Araceli,

Palace Farnese in Caprarola, Palace in Piacenze. Important author on Architecture. Book on the antique orders of columns.

1491-1580. 37. Pirro Ligorio.

Church S. Maria sopra Minerva, Papal Villa near Vatican, employed on Palace Vatican and S. Peter.

1511-1574. 38. Giorgio Vasari.

Dome of Umlta in Pistoja, Uffizi in Florence, buildings in Arezzo.

1511-1592. 39. Bartolommeo Ammanati.

Court design of Palace Pitti and creator of Fountain of Neptune in Florence, Palace Pucci, Vitali etc., then Palace Ruspoli in Rome.

1522-1592. 40. Pellegrino Pellegrini, Tibaldo.

University, court of Palace Archbishop, Palace Magnani (with mural paintings of Mantegna) in Bologna.

1506-1563. 41. Fra Giovanni Montorsoli.

Palace Doria in Genoa, marble Fountain in Messina.

1511-1572. 42. Galeazzo Alessi.

Palace Municipio in Milan, S. Maria de Carignano, Palace Imperiali, Palace Brignoli, Palace Spinola, Palace Pallavicini in Genoa.

1518-1580. 43. Andrea Palladio.

Basilica, Palace Porto, Villa Rotonda in and near Vicenza, Church S. Redentore in Venice.

1532-1616. 44. Vincenzo da Scamozzi.

New Procurazio in Venice, Palace Trissino in Vicenza, Palace Cornaro on the Grand Canal, and completion of Library S. Marco in Venice. Architectural author, Architettura Universale. 1625. (Published after his death).

1599-1667. 45. Francesco Borromini.

Palace Spada, towers of S. Agnese, Sapienza, S. Andrea delle Fratte, Palace Barberini, all in Rome.

33 1556-1639. 46. Carlo Maderna.

Nave of S. Peter, Palace Mattei, Palace Barberini at Rome.

1598-1680. 47. Giovanni Bernini.

Engaged on S. Peter in Rome, tabernacle in S. Peter, Palace S. Apostoli, Palace Barberini, fountain on Place N Navona, colonnades before S. Peter in Rome.

1543-1607. 48. Domenico Fontana.

Portal of Cancellaria, Acqueduct Paolina, erection of obelisk on Place S. Peter in Rome.

1541-1604. 49. Giacomo della Porta.

Villa Aldobrandini in Frascati, S. Annunziata in Genoa, the facade by Luigi dei Francesi.

1685-1735. 50. Filippo Juvara.

Cathedral dome at Como, Superga near Turin.

1624-1683. 51. Guarino Guarini.

Mathematician and writer on Architecture. Theatine monk from Modena. S. Gregorio at Messina, Palace Carignano, S. Lorenzo in Turin, various designs for domed churches. (Editions of Book; 1686, first edition; 1737, second edition, with text).

1700-1773. 52. Luigi Vanvitelli.

Palace in Caserta near Naples.

1642-1705. 53. Father Pozzo. S. J.

Ideal architectural designs. Most famous painter of churches. Author of Work; *Perspectivae Pictorum atque Architectorum*. 1706. Perspective for painters and architects. Edition in small form.

1625-1665. 54. Giovanni Maria Galli, called Bibiena.

Artist family, theatre architect, festival decorations. Large work on *Architettura e Prospettive* by Giuseppe Galli Bibiena. 1740 and 1769.

13. Luciano da Laurana.

What may further decide for abandoning the preferred subdivisions for the architectural history of the Renaissance in Italy is the recently sought prominence of a 15th century master by Professor Th. Hoffmann in his Essay:-- "The Buildings of Duke Federigo di Montefeltro as the Firstfruits of the Works of the Renaissance. Leipzig. 1905"; (also see the discussion of the essay in *Deutschen Bauzeitung*, year 1905); of a master, which an art loving prince, on the refusal of the architects then at Florence, called for his palaces in Urbino and Gubbio, Luciano da Laurana from Dalmatia. His appointment was confirmed by the following patent, whose original is to be found in the Vatican Library at Rome. Its text in German translation was given to us in 1857 by Friedrich Ar-

34 Arnold. ²⁰ It supplies evidence of the independent decision of the prince, and his esteem for architecture and its representatives at that time.

Note 20. Arnold, F. *Der Herzogliche Palast von Urbino*. Leipzig. 1857. -- Original of the patent in the Vatican Library at Rome. Yet Vasari knows nothing of the master. Whether he "intentionally or not" omitted to mention him, may here remain undiscovered. The statements of Reposatis, according to which the erection of the Palace was begun in 1447, are therefore to be corrected, or they were limited to underground work, that has nothing to do with the name of Luciano.

Of his earlier activity, but little is to be said with certainty. (See F. Arnold). Baldi says, that he built the *Poggio Reale* (Ducale ?) at Naples, and also executed considerable work as a painter. Serlio narrates of the building, that King Alfonso had it built "for his pleasure", and named the maker of the plan his "discreet architect".

If this be conclusive, then the erection of the Palace *Poggio Reale* by Giuliano da Majano (1481) must be discarded. We know it is determined, that Laurana did not see the Palace in Urbino in its present completion. One should not allow himself to be carried away by a bad caprice; most is corrected by itself or by the power of circumstances. Thus it occurred to the great Federigo da Montefeltro, when he became angry with the Florentine architects. For his conditions and aims he could scarcely use imitations or similarities to Palace Pitti or Palace Riccardi, but to condemn them was unnecessary. And that his Dalmatian friend and other self in building during his lifetime received an assistant from the vicinity of Florence, who likewise did not remain till the completion of the Palace, was a witticism of fate.

It (the patent) runs thus:-- "All men, we judge, must be honored and famed, who find themselves distinguished in spirit and ability, who always in the world stand between the old and the new, like the knowledge of architecture, based on the sciences of arithmetic and geometry, that are the first of the seven free arts, since they are in the highest degree of certainty, and the art -- Architecture -- is of great science and great genius, by us very much esteemed and approved;

and we have sought everywhere, especially in Florence, where is the source of architecture, and have found no man truly skillful in this art; finally have we heard and later seen and learned by experience, how the the excellent man Luciano Ostensore is very learned herein and instructed in this art; and having decided to erect a residence, beautiful and worthy of our rank, like the praiseworthy fame of our ancestors, we have chosen and decided on the said master Luciano as engineer and head of all masters, who will labor on the said work, thus the masons, the master stonecutters, the masters of the woodworkers, the smiths, and every other person of whatever grade, or business he has on the said work; and so we will and command our masters and workmen, and all our officers, who have oversight and perform anything at the said work, to obey the said Luciano in everything, and to make what is required of them by him, no differently that for our own person; and we particularly command Andrea Catani, our chancellor and keeper of the coming decisions concerning the said house, and likewise master Matteo dell'Isola, cashier for the said work, that in the payments they submit strictly to the decisions of master Luciano. Also master Luciano has unlimited power, freedom and force to discharge and to employ the masters and workmen, to determine their wages and to withhold them, if the work be not to his satisfaction, to let the work by agreement or by day wages, to punish, to judge, to retain from wages, for whosoever has not done his duty, and to perform all other things pertaining to an authorized architect and head master, just as we could do, if we were present. In testimony thereof, we have made this patent and have had attached our great seal. Given in Castle Papiae. June 10. 1468. ²⁰

With him, and indeed later alone, Baccio Pontelli was engaged on both palaces in Urbino and Gubbio, who became head architect for Federigo after Laurana's death.

In the Milanese edition of Vasari it is stated, that Pontelli as a man of 29 years was engaged on the Cathedral at Pisa, from which he entered the Duke's service. After his death in 1482, Pontelli traveled to Rome, where under Sixtus IV, he erected certain buildings (S. Pietro in Montorio, S. Agostino etc), and died there or in Urbino (1492 ?). It is assumed that the Palace was chiefly completed in 1482, thus being br-

brought to an end by Pontelli. Under him Ambrogio Barocci executed the stone ornaments on the doorways and fireplaces, and Gondolo Tedesco the woodwork, both equally excellent in composition as well as in execution.

37 Assuming that Luciano da Laurana actually built the Palace
36 at Poggio Reale near Naples, this must indeed have occurred before his transfer to Urbino. He died in 1482 or 1483? Placing the average life of also this Renaissance master at 70 years as a basis here, then he was born in 1412 and was about 8 years older than L. B. Alberti. Thus they were close contemporaries, and both were employed in the same sense, i.e., in the tendency to the antique, to bring its rights into effect in the later architecture.

We will assume that Laurana had already been for 25 years a practicing architect, but what had he done in the time from 1437 to 1468 (during the space of 31 years), besides the Palace at Poggio Reale near Naples? The latter must have been taken up 8 or 10 years before his death, and then remains always more than 20 years of professional activity, which is still a sealed volume. Something more must yet have existed from him, which gave opportunity for the comparison with the Florentine masters and their disdain by Federigo.

The guide books allow the old Palace of the Duke at Pesaro, now Palace Prefettizio (Figs. 20, 21), to have been erected by Luciano, which was begun for the Sforza, and in the 18th century was finished by the two Gengas for the Roveres. 21

Note 21. According to Dr. B. Patzak (*"Die Villa Imperiale in Pesaro"*, Leipzig, 1908), Budinich has produced evidence, that in May Laurana undertook a rebuilding of Palace Prefettizio in Pesaro. That would have been 3 years before his engagement and call to Urbino. Then Federigo certainly had the possibility of observing this master for a few years in the vicinity.

The old Villa Imperiale near Pesaro built by Sforza then fell to him; but this building then as now had neither on the exterior nor in the interior commendable architectural peculiarities, from which could be deduced a call to a higher position. The patent of appointment of Laurana of June, 1468, is a document fatal to many statements, and the names of Arnold and Laspeyres will not be gladly invoked by certain gent-

gentlemen.

According to P. Schubring (*Stätten der Kultur. Leipzig. N.D.*), the Palace was built by Laurana in 1465, which would be 2 1/2 to 3 years before his installation in Urbino. (June 10, 1468).

For Federigh had not to go far to find his palace architect, and the distance to Naples was spared to him.

Jacob Burekhardt places the time of its erection (see 1 st and 5 th edition of the *Cicerone*) in the years 1518-1558, and names as masters the two Gengas (father and son), who also designed the neighboring Villa Imperiale; its earlier portion was built in 1466 or 1468 under Alexander Sforza, according to the shield of arms over the entrance. The completion of the older building coincides with the year of the installation of Laurana in Urbino. What conclusions are to be drawn from this? Then the older Villa Imperiale would be the intermediate stage between Pesaro and Urbino.

Burekhardt (5 th edition) calls the Palace in Pesaro a great building of 2 stories with 5 colossal windows above 6 arches, "arranged with a harmonious effect". The facade with its loose axial system is now indeed not very harmonious. Schubring is of the opinion, that it exhibits an entirely unflorentine architectural style". It does not appear to me so much so, at least not for the arrangement, if for example, we consider in this respect the facade system of the portico on Place S. Maria Novella in Florence (Fig. 23), or the facade of the Foundling Hospital there (1425), or that of the Hospital del Ceppo there (Fig. 22). "Unflorentine are only the rusticated piers, which betray a man earlier than Laurana. What Schubring otherwise says of the facade is entirely inapplicable, already contradicted by the photograph given by him. (Also see Section XII, Palace Architecture).

From the hill castles near Urbino with their massive defensive towers, which certainly are very interesting offerings, no preliminary steps for the High Renaissance can be derived, and indeed not from the portal and forecourt of Castle Piobbico of Urbino, etc. Of the magnificent courts of the Palaces of Urbino and Gubbio, it is frequently assumed, that they are chiefly the work of Pontelli. What remains there as certain for the "divine master" from Laurana? Meanwhile still some

remarkable things ! The sympathy with antique art was never lost in Italy, and also in Adria; men had too many fixed evidences and well preserved monuments on both shores. (Brindisi, Ancona, Spalato, Salona, Pola etc.). Likewise the inhabitants on both sides remained in contact with each other. In the year 1464 Michelozzo received the order to take charge of the rebuilding of Palace Rector in Ragusa, while in Florence with his pupil Giorgio (Dalmatian), both as supporters of the architectural expression; as created by the early time of the Renaissance in Italy. 22

Note 22. See Berlepsch, H. and F. Weisser. Bauten in und um Ragusa. Zeits. für Baum. Berlin. 1894.

More than the hill castles in Umbria, the Castle del Monte, the hunting castle of the Emperor Frederick II (1240), and the beautiful castle court of Palace Sylos-Lobini in Bitonto, exhibit the stamp of the preliminary stages of the developing new art; in Castle del Monte the portal, adorned by a gable and flanked by half columns like Corinthian, in Bitonto the small portico of the palace mentioned, which was erected by the Vulpioni family about the end of the 15 th century. Its architect belonged to the Tuscan school. 23

Note 23. See "Aus dem klassischen Süden". Third Study Tour of Baden Gymnasium teachers, with essays by Schmitt and Leonhard. Lubeck. 1896. For the Palace in Gubbio particularly, the essays and illustrations on Palace Ducale there, in Zeits. für Baum. 1881. Berlin.

What has been developed in the preceding is nothing new, but in part was already made known before in 1857 (Arnold), 1860 (Burckhardt), 1881 (Laspeyres) and in 1896 (Redtenbacher), otherwise still later by von Reber and Schmarsow. Yet I believed it should be referred to, although in somewhat different form, since in 1905 it was stated by Th. Hoffmann, that the Dalmatian master Luciano da Laurana (who was well trained in the Italian style) appeared "independently from the Tuscan early stages" with the Palace Prefettizio in Pesaro (which is not to be proved and is for other reasons scarcely credible), and with the Palaces in Urbino and Gubbio. There were two currents, that flowed together in the eternal city about 1500. One with the "ornamenting heaven" in connection with "tectonic

elements" (without the latter architecture is indeed not to be conceived ?) already attained to great power in 1470 at Pesaro and Urbino through Luciano. It was adopted by Bramante for Lombardy and by Raphael for Central Italy. The other current was from the narrow Florentine circle; columns and pilaster arrangements Giuliano da Sangallo had brought to Rome. (Well since in Rome none from antiquity were preserved at that time ! ?). Under Bramante and Raphael both forces then united. For both currents the close is to be sought in the life-work of Laurana. The circle of his followers has carried the elements into every land and the entire world, partly in "thoughtful", partly in "antique", and partly in "naturalistic" manner.

"But the Palace of Urbino might be the source of the High Renaissance, wherefore this should be placed some 100 years earlier". And much now passing under the character of a "Bramante's style", may be attributed to Luciano's period of development (which by the way we do not know); Luciano da Laurana may alone have been the architectural pioneer before Bramante. If Pentelli did not build the palace courts in Urbino and Gubbio, the news deserves a hearing. But beside Luciano stood yet other persons, of whom one man in particular is a contemporary (?) with him -- the great Leon Battista Alberti -- likewise a pioneer and gifted precursor of Bramante, who had in thoughtful, antique and naturalistic relations previously struck out other routes, than his Florentine colleagues in the invention of the Renaissance in Tuscany, who as one of the first was conscious of the antique in genera,, and again adopted it in details.

14. Leon Battista Alberti.

Of Alberti we know, that he already in 1447 (others prefer 1450) prepared models and plans for his work on S. Francesco in Rimini -- thus already 15 years before the beginning of the work in Urbino and Gubbio. What he executed there is treated in the antique, maturely conceived, and detailed in a manner not occurring on any other work of that time. What he proposes is sound, Roman ashlar architecture and none of the artistic brick architecture of Upper Italy, influenced by ornamental parts, under the pressure of which Bramante's

buildings in Rome (Cancellaria) labor frequently. Their flat relief and timid projections, however beautiful and complete they may be otherwise, must be a residue from his Milanese architectural brick epoch.

In the year 1467 (confirmed by the inscription on the chapel), Alberti had already completed his Jerusalem Tomb-chapel near S. Pancrazio in Florence -- thus a year before the installation of Laurana in Urbino. In 1470 Alberti had executed the portal of S. M. Novella in Florence, and two years later, he begins his works at S. Andrea in Mantua, with its grandly designed middle aisle and the rhythmic bay on the walls, "a precursor of S. Peter in Rome!" Between 1460 and 1466 lies the erection Palace Rucellai. Not extinct are the works of his colleague Rossellino in Pienza of about this time. (1453, 1460, 1462, 1464). In the year 1470, Pietro da Milano had completed his Triumphal Arch in Naples for Alfonso, in Perugia the Gate S. Pietro with its Corinthian angle pilasters (begun 1448) was finished to the main cornice (1275), and in 1484 Gate Capuana in Naples by Giuliano da Majano.

These are entirely works of perfected form and of the first rank, which also still required some "thoughtful" arrangements, and were not done offhand; all of them have their beginnings in a time earlier than that, in which Laurana created his principal works.

And so high may one estimate the creations of Laurana-Pontelli in Gubbio and Urbino in regard to proportions and details, the works of Alberti and his school do not place them in the shade. He is and remains basal and the tone for all works of the new art, that show a form different from the Florentine palaces, built on half Gothic principles by Brunellesco and his colleagues.

Of what was attained in architectural forms in the court of Urbino be the "beginning High Renaissance", then even the architecture of the facade of S. Francesco in Rimini and of the other works mentioned deserve the same rank, only with the difference that these are still earlier by various years.

According to Vasari, Bramante was the pupil of Fra Battolomeo (Fr. Carnovale da Urbino), and it is more than probable, that after 1468 Bramante received a stimulus toward the study

of architecture through Luciano da Laurana (Bramante was then 24 years old), even working with him as H. von Geymüller assumes.

From 1476 onward, Bramante is mentioned in Milan -- thus 9 years after commencing with Laurana; it is possible that he found connections there through Barocci Ambrogio da Milano, then working on the erection of the Palace in Urbino. He was engaged there as painter and architect. From 1476 to 1495 he built at S. Satiro. Was what he did for this church based on Laurana's school? -- scarcely! Ornamented enclosing pilasters as structural elements or for subdividing the facade surfaces are not to be found with Laurana -- as enclosures of doorways and windows -- yes. Arcades on columns likewise Laurana had not invented, for others already executed these before him. The internal decorations in Urbino came from Milan, the court architecture perhaps from the Pisan Pontelli -- what then remains for the "divine master" da Laurana, which might stamp him as a pupil of Laurana? The only thing that could be received from him was the incitement toward architecture, and the arousing of his innate qualities for it. That is indeed much.

But if we take the case practically there remains for the pupil Bramante only the great instructor Alberti and the Roman antique as a model, but nothing more. His own genius carried him further. The love of ornamentation for facade architecture also did not long decrease from the first appearance of the so-called High Renaissance; it also is no exclusive characteristic or indication of the Early Renaissance, for even about 1500 appears the showy facade of the Palace del Consiglio at Verona, and somewhat earlier that of S. Maria dei Miracoli (by Beretta), and that of the City Hall in Brescia; likewise on the facade of the Certosa near Pavia were later employed overrich decorative expedients.

Strict separations are hard to carry out, as already stated, and according to the evolution, I might again emphasize, that we should do better with Wölflin to divide the Renaissance movement into two great periods, under the reservation made by me, into one from its beginning to the appearance of the Barocco, and the second from thence to the dying out of the

new art about the year 1800. The memory of Laurana will not be obscured thereby, when he must be placed in a different class. On the assured statements in regard to the priority of some works, he must indeed renounce this.

To clarify the survey, as the works appear in the course of the years, a Table of those from 1416 to 1484 is added. A chronological list of all events in the domain of architecture of the Italian Renaissance, extending from 1100 to 1798, was prepared by Rudolf Redtenbacher,¹² as carefully as possible with the uncertainty of the data. We refer those to this, who desire to quickly orientate themselves.

One thing we desire to not forget and overlook in this, is that the Renaissance in its beginnings did not express itself in the same manner in all parts of the country. The beginnings of Northern Lombard and Venetian schools have a different mode of expression, and speak a dialect differing from those of Middle Italy in Tuscany, Umbria and the Mark of Ancona, it is otherwise on the coast province near Pesaro and Rimini, and again different at Bologna, Perugia and Siena, Rome and Naples. And what is true as a characteristic of one, is still for long not permissible for the others, and must not be made general or applied to all.

List of Important Dates in Architectural History from the Beginning of the Renaissance in Italy until the year 1484.

Year.	According to Dates and Documents.
1416-	. Jacopo della Quercia. Transfers baptismal font to Siena.
1423-	. Brunellesco is paid for the model of the wooden ties on the Cathedral dome at Florence.
1421-1425.	Brunellesco builds in Florence the so-called Hospital degli Innocenti (Foundling Hospital), Chapel Pazzi, Palace Quaratesi.
1431-	. Brunellesco permits his model of the dome to be destroyed.
1431, June. 21.	Completion of Cathedral dome in Florence.
1436, Dec. 31.	Model for the lantern is approved.
1440-1443.	Documents relating to Brunellesco are wanting. (Palace Pitti?).

- 1424-1425. First bronze doors on Baptistry in Florence are completed; the second pair is ordered from Ghiberti.
- 1428-1434. Alberti in Florence.
- 1430-1431. Brunellesco in Milan, Mantua and Ferrara.
- 1433- . The Renaissance introduced in Venice by Michelozzo.
- 1434- . Alberti in Rome. Dedication of his Treatise to Brunellesco.
- 1435- . Royal entry of Alfonso I of Naples.
- 1437- . Federigo da Montefeltro becomes Duke of Urbino.
- 1437-1443. S. Marco built in Florence by Michelozzo.
- 1439-1435. Cathedral in Como.
- 1443- . Triumphal Arch of Alfonso at Naples.
- 1484- . The Renaissance introduced into Naples by Pietro da Martino from Milan. Gate Capuana.
- 1446- . Death of Brunellesco in Florence.
- 1447- . The Renaissance brought to Rimini by Alberti. S. Francesco.
- 1450- . The Renaissance is carried to Rome by Alberti, Bernardo di Lorenzo and Bernardo Rossellini.
- 42 1450- . Conquest of Constantinople. (?).
- 1451-1553. Palace on Loggia Rucellai, Florence.
- 1451- . Bernardo Rossellini in the service of Nicolas V.
- 1452- . Alberti's Treatise "De Re Aedificatoria".
- 1452- . Pietro Pontelli born.
- 1455- . Palace Venezia in Rome began. (?).
- 1456- . Francesco Sforza gives to Cosimo Medici his Palace in Milan.
- 1456-1471. Many sculptors on Triumphal Arch of Alfonso.
- 1458- . Alfonso of Naples dies.
- 1459- . Pius II must build his Palace in Pienza.
- 1460- . The Renaissance comes to Mantua through Alberti.
- 1462- . Palace Piccolomini in Pienza.
- 1464- . Michelozzo in Ragusa.
- 1464- . Francesco di Giorgio works in Siena and Rome.
- 1465- . Giuolano da Sangallo in Rome.
- 1465- . S. Maria delle Grazie in Milan begun.
- 1466- . Giovanni Onedeo employed on the Certosa at Pavia.
- 1466- . Palace Venezia, contract with Bernardo di Lorenzo.
- 1468- . Luciano Martini da Laurana called to Urbino.

- 1468- . Bramante incited to architectural studies by Luciano Laurana.
 - 1476- . From this date onward, Bramante is mentioned as being in Milan. But according to H. von Geymüller, this already occurred four years earlier (1472), since he rebuilt at this time Church S. Satiro in Milan (choir and sacristy) begun by Solari. Then followed the choir of S. Maria delle Grazie, the chapter hall of S. Ambrogio, in 1486 a model for the Cathedral dome, the Palace at Vigevano (1492) (indeed only part), and other palaces in the vicinity. A great number of church buildings outside Milan are there still attributed to him. After the fall of the Sforza (1499), Bramante left Milan, and settled in Rome at the suggestion of Ascanio Sforza, as well as to study the ruins of the city.
 - 1500- . Henceforth his works mostly belong to the eternal city until his death.
 - 1514- . On March 11, 1514, Bramante died. From 1468 at the age of 24 years, he was under the influence of Luciano, and only at 56 years did he become an independent creating artist in Rome, after he had previously been engaged in practice in Upper Italy.
- Extending the List farther, it may still be stated that:--
- 1470- . Alberti designed his buildings for Mantua. From 1460 onward, his influence there is verified by documents, since Alberti had already died in 1472.
 - 1472- . Year of the death of Michelozzo.
 - 1474-1483. Federico had erected by Luciano da Laurana the Ducal Palace in Gubbio.
 - 1475- . Gate S. Pietro in Perugia is built by Agostino di Duccio.
 - 1475- . Michelangelo was born.
 - 1476- . Also Girolamo Genga.
 - 1481- . Villa Poggio Reale was built near Naples by Giuliano da Majano for Duke Alfonso of Calabria, contrary to which Baldi asserts, that Laurana was the author of this Villa Poggio Reale. The Palace is destroyed.

1941-1942. The Bureau of
the Department of the Interior.

15. Evolution of the new law in Italy.

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1482- . Luciano da Laurana dies.

Map. 1484- . Also Federigo of Urbino.

43 15. Evolution of the New Art in Italy.

Perhaps the evolution of the new art in Italy may also yet be represented in a different way, and indeed more distinctly by a geographical illustration (see Plate D), on which are first given the places in which Grecian-Roman monuments yet stand today, and these were preserved in even greater numbers at the time of the commencing Renaissance.

It becomes especially important by the circumstance, that in these was given the impulse for again adopting antique art forms and the great architectural ideas, even if not alone.

Here it should be repeated, that the "Grecian-Antique" in the Peloponnessus (the Acciajuoli were Dukes of Athens in 1394), in Sicily and Lower Italy (Egesta, Selinus, Agrigentum, Syracuse, Paestum, Croton, Tarentum and Metapontum) continued to be disregarded by the first and the last masters of the R Renaissance movement. Alone was it the "Roman antique", which men met with, that indeed men never entirely rejected in the structures of the preceding centuries, as shown by the buildings at Pisa and Lucca(1063-1118), the works of the Cosmati in Rome, the Church S. Miniato near Florence, and particularly exhibited by the classic Baptistry rebuilt in 1200 in the Tuscan capital, (indeed in its first beginnings dating from the 7 th or 8 th century), with its quiet and simple external architecture and its rich internal architecture.

Sicily then remained entirely out of consideration in architectural relations to the development of the new art of the Italian peninsula, if one does not concede an influence of the Hohenstaufen court there, which indeed gave much incitement. But not is it alone the old Roman monuments on Italian soil, which have always kept awake the memory of the great past among the people and their leaders, it is likewise the region from Pola to Spalato, separated by the Adriatic from the Italian peninsula, which held minds under control by their rich treasures of the even yet relatively well preserved architectural works.

The Eastern coast of Italy from Brindisi to Ravenna is able to show so many good intermediate stations, for example as in

Ancona the Arch in honor of Trajan, in Rimini the Arch of Augustus, and opposed even to the proud remains of the Imperial Palace at Spalato are the buildings of Salona. But the special worth and of a wide effect were the structures in Pola, T Temple, Triumphal Arch and Amphitheatre.

Spalato and Pola must always be remembered by the inhabitants of the Eastern coast of Italy, and they may be said to have created further on the ancient bases. Spalato lies just opposite the coast line; from Pesaro - Ancona - Rimini and from Pola to Udine, Venice to Ravenna, may be drawn an entire series of rays to the Eastern coast mentioned. What its own soil did not afford was offered by the adjacent less famous vicinity.

In Southern Italy, in the immediate surroundings of Naples were the buildings of Pozzuoli, Bajae, Capua, and especially the beautiful and well preserved Triumphal Arch of Beneventum (erected to Trajan in 115), one of the most important decorative works of Roman art, which could not remain unconsidered.

Then in Middle Italy was "eternal Rome" with its abundant and magnificent materials.

In the North were the places, Turin, Aosta, Susa, Milan and Verona with their grand remains.

Whatever the African coast yet offered may be here left out of consideration.

Surrounded by and in the midst of the grand works of their ancestors, it was not the regions best supplied therewith from which came the impulse to the revival.

We shall here recall a song of Heinrich Heine, who says:-- "The most beautiful spring songs are made behind the stove in winter". The longing for spring in art worked afar from this, so much more powerfully, and the remembrance and the faith in its reappearance incited to a new melody.

Ruder Tuscany, poor in old Roman models, bore the first masters, who knew how to give monumental expression to their longing, whereby it must be repeated, that we owe the initiative to poets, learned men and politicians (Bante, Petrarch, Mussato, Rienzi etc.); they created the inspiration for it, to them came also the change in social affairs, the changed demands on life and the higher degree of education of rulers and

citizens, the endowment of the race, whose natural feeling for beauty and the ability to give expression to it.

The North at first gave more than the rich South. The dwellers on the Alpine lakes and those of the plains of the Po, those from the Ligurian coast as far as Pisa, furnished the technical materials, trained by mediaeval buildings, which ripened into artists, working masters and workmen in their specialties.

The Tessin, Como and Bergamo, but particularly Milan and Pisa distinguished themselves therein; they sent their men to Urbino and Naples, who made proof of their abilities on the first and greatest works of the young Renaissance. In the first attempts already occur material discords between their originators. The starting point is not the same for all. They may be collected in distinct groups. The first, comparatively short-lived, sailed in the current of the middle ages, and employed occasionally an antique detail, which is particularly expressed in house and palace architecture. "There is no new mode of composition in general, but rather a new mode of expression in details". (See Meyer, Dr. A. G. Oberitalienische Renaissance. I and II. Berlin. 1897-1900).

Representatives thereof are the Florentines Brunellesco (died 1446) and Michelozzo (died 1472), with their chief works of the Cathedral dome in Florence, Palace Pitti (?), Church S. Spirito and Palace Riccardi-Medici; with them should be reckoned Simone da Pollajuola (died 1508), called Cronaca, but who dropped ashlar construction and substituted on Palace Guadagni stucco construction with sgraffito paintings in its place. Giuliano da Sangallo, who died a few years later (died 1516), again adopted rustication with ashlar bosses dressed to definite patterns, with the most consisted graduation on Palace Gondi. There is absolute symmetry in the arrangement of the windows, a subdivision of the ascending wall mass into plinth, body and crown (terminating main cornice), subdivided by window sill belts, main cornice, its height and projection harmonized with the whole, a characteristic indication on the palaces of this epoch. No membering or animating of the wall surfaces appears, ornament is limited to that most necessary, the facade is only effective by the alternative

effect of openings and masses, whose proportions are almost determined and judged mathematically.

Differently expressed was the Early Renaissance in Upper Italy. It matured a mixed and strongly Gothic style, that chiefly had its representatives in Milan and Venice, but also has left important vestiges of its activity in intermediate stations and down below Bologna.

As a pioneer appears in Milan Antonio Averlino, called Filarete (died 1479 ?), a Florentine master well recommended by his Treatise on Architecture. He left Lombardy in 1465 in order to take up his residence in Rome, and was idle thenceforth. His works, Bank of the Medici in Milan (1455) and his Hospital Maggiore there (plans prepared in 1448) remain, even if not in all their parts, of permanent value to the later world. To his Lombard contemporaries settled in Milan, he was not always a welcome guest.

For they were also convinced of their mission, like the Tuscans, and could look on their works with pride and satisfaction. Moreover they had "the expelling will of an energetic head" for themselves. The Cathedrals in Milan and Como, as well as the Certosa near Pavia, were problems sought by their men, and which they also produced to redeem Upper Italy. A. Omedeo built (1470-1473) Chapel Colleoni in Bergamo, Solari-Rodari constructed the wooden model for the Cathedral there, still preserved and exhibited in the Civic Museum at Como. Beginning on Gothic, carried further in the new style, and completed in 1542 in its most essential parts, appears the vast structure of the Certosa near Pavia, with its marble show facade, executed under the lead of Giovanni Antonio Omedeo (1466, also written Amadeo), and by other cooperating artists.

In Venice was built under A. Rizzo the court of Palace Doge, after 1477, by Martino Lombardi with the assistance of Pietro and Tullio Lombardi, in 1485 the School S. Marco, and other public buildings from 1496 to 1517 by Pietro Lombardi, Bartolomeo Buon, Guglielmo Bergamasco and Girolamo Tedesco.

In Padua Biagio Sossetti from Ferrara erected the Palace del Consiglio, formerly attributed to Fra Giocondo, one of the most charmingly painted facades of the Early time of the Renaissance in Upper Italy; Vicenza likewise about the change

from the 15th to the 16th century, the fine court of Palace Archbishop; in Brescia the show piece of S. Maria dei Miracoli, built in 1500-1513 by Pedoni and occupying a mean between milanese and Venetian influences, then also the beautiful Palace Comunale (1508), designed in 1489 by Formentone and Thomasius from Vicenza.

Crema, Cremona and Bologna in their intermediate locations cultivated in their brick buildings the same new style in a most expressive and also prominent manner. Here might I draw the border of Upper Italy. Until about the year 1500, it dominated in its own way the new style, and was scarcely influenced by the "great men" mentioned in Florence. Thus its creations lie in time not far from those presented by Florence, 46 but they have nothing to do with the principle of subdivision of the facade, nor with the details of those. It is no ashlar colossus, but rather chiefly graceful marble or brick buildings with rich ornamentation. Frequently is the early time of the Renaissance without restraint as a general characteristic, the exuberance of ornament is expressed on all architectural members, and Dr. A. G. Meyer also says in his book, so finely equipped in the knowledge of art (II, p. 63), "that the Early Renaissance in all places was accustomed to stretch a precious and charmingly rich garment over its architectural parts, but it frequently weaves the same from chance selected antique and from newly created forms, forgetting but too generally, that the tectonic nucleus and the ornamental covering must stand in innate and organic connection. Likewise they misunderstood the principle derived from the "true" antique:-- "The form of the body is the mirror of its nature". On the closing principle introduced in this place from Carl Bötticher's Tektonik, that neither is adapted to mankind nor to the most recent reinforced concrete construction, may well be a different opinion; for Upper Italy the quotation is in place. But it does not apply to Tuscany. One will seek in vain in Florence for a closely knit covering of ornament on monumental buildings. Already the building material offered there, the sandstone, forbids this, and only the artistic brick structures make an exception, based on the peculiarities of the building material. Thus for a critical consideration of the

new manner, the regions of the country must be kept apart, in which it occurs. Nothing is true of all.

The Milanese ornamentists, stone carvers and ceramists indeed were in such great numbers, that they could supply the needs of all Italy, yet "Florence will remain for all time the radiating focus of the early time of the Renaissance". It made good without this.

But back to Florence! From one of the families exiled thence was born a son in Venice in 1404, who with his colleague Rossellino, who came into the world in 1409, and his pupils were penetrated by the like longing for the reorganization of architecture, as Brunellesco 25 years earlier. The same desire inspired both, even if the way to the aim was primarily different. There were still concessions to the middle ages, here a frank and complete recognition of the Roman antique, as the model for endeavors and attainment. Besides Brunellesco and Michelozzo, he was readily named as the third great master in the new tendency, equally great as theorist as a designing and constructing architect -- Leon Battista Alberti --, a mortal, not all of whose desires were fulfilled.

In the year 1465 the attainments of the Florentine Renaissance had already become common property. (See Meyer).

Alberti's first works date back to the year 1450; he appears as a creative architect in Rimini (S. Francesco), in Florence on Palace Rucellai (1446-1451), in Mantua in 1459 and 1472 (S. Andrea), and in Pienza on Palace Piccolomini (1459-1463), if for the latter the authorship cannot be contested. In his Florentine palaces he returns to the antique theatre facade; "arched windows between pilasters", the main cornice harmonized with the order of the uppermost story, the cornices or belts separating the stories consisting of architrave, frieze and cornice. The wall surfaces are of wrought ashlar in courses, separated from each other by rectangular sunk joints, and have nothing to do with the favorite expression of "rustication". Rusticated ashlar is roughly dressed stones with or without pitched faces, but without bosses cut to a definite pattern !

The most difficult new impulse is the decoration of the wall surfaces, not by paintings, but by architectural elements, which do not have a structural purpose, just as little as the

half and three quarter columns derived from the antique. The vertical subdivision of the wall surfaces then always proceeds only in the separate stories, at least in palace architecture.

Alberti and his school consciously and without discussions appear for the revival of the antique, if they may also in part fill its great arched windows by small arcades, indeed on account of practically closing them. On the front of S. Francesco in Rimini is Alberti the man with an antique mode of thought and design in monumental art. And yet he does not stand alone there with his school, even if he is also the first to create a palace facade subdivided by pilasters.

Independent from him remains the seven masters of the Triumphal Arch, that King Alfonso of Arragon caused to be erected in memory of his entry into Naples (Feb. 26, 1443), and the erection of which was begun in 1445 under the lead of Pietro da Milano and of Isaia da Pisa, two men from Upper Italy, who created the first monumental work of the Italian Renaissance free from mediaeval reminiscences, thus not merely of that in Southern Italy! Therefore their opportunity came 5 years earlier than for Alberti.

The composition, at least for the elevation of the lower story, is indeed nearest to the Algerian Honorary Arches at Haidra and Tebessa, by the combining or coupling of the pairs of columns at the angles. Extending the arch upward through several stories was indeed compelled by its location between two lofty towers of the fortress, but it is skilfully treated, and adorned by faultlessly conceived details, just as painfully imitated. The sculpture is perfectly beautiful. (On this see G. von Fabriczy in *Jahrb. der Königl. Preuss. Kunstsammlung*. 1899-1902, and Alfonso Avena. *Il Restauro dell' Arco d' Alfonso d'Aragonia a Napoli*. Rome. 1903).

Somewhat later occurs in the same sense Agostino di Duccio in his facade of the Oratory di S. Bernardo in Perugia (1457-1461), and about the same time (1450) Polidoro di Stefano with Gate S. Pietro in Perugia. In spite of the vicinity of Benevento, it was scorned by the Lombards mentioned, not even in details "imitating" anything from the Honorary Arch there, on this Triumphal Arch at Naples. Giulio da Majano was guided by the same ground principles. As for Palace Poggio Impe-

Imperiale likewise built near Naples, we only know by Serlio's ground plan. Its facade therefore remains doubtful and improbable.

On Palace Tabassi in Sulmona, one of the most interesting architectural monuments of the Early Renaissance, there may be read on the portal: -- "Master Pietro of Como built this gate in 1448". This individual must accordingly be identical with one of the builders of the Arch of Alfonso. Assured knowledge of the presence of Pietro in Naples, we have after Jan. 11, 1455. He was afterwards engaged in Siena, Padua and Orvieto from 1446 to 1458.

A man now appears in the architectural history of the Italian Renaissance, about whom Vasari is strikingly entirely silent, and who might contest with L. B. Alberti his fame of the introduction of the antique into the new art. This is L. Luciano da Laurana, apparently from La Vrana near Zara, and not from the small Italian city of Lovrana. He must also not be confused with Francesco Laurana, who is mentioned by C. v. von Fabriczy (p. 113, note 1), and who was employed under Alfonso I in Naples, then in the service of King Renee, and then from 1468-1471 in Sicily and in 1474 at the court of Frederick I, then again in France. Both must indeed have been related. Luciano died in 1479. A. Ga Meyer terms him the decided pioneer of classicism; F. von Reber (Munich, 1839) makes him the founder of the High Renaissance architecture, and before him Schmarsow already wrote, that his creations in Urbino was the birthplace of the style, that we represent to ourselves, if Bramante and Raphael are mentioned. (Indeed rather dark!). "On the Palace of Urbino was completed the victorious change of the Early Renaissance to classical purity". Which is meant there? That of Brunellesco, the Lombard-Venetian, that of Alberti, or that introduced in the South by Lombards and Florentines? And what did then Luciano Laurana build? Palace Prefettizzio in Pesaro is attributed to him, which was begun by him before 1465 for the Sforza, and in the 16th century was completed by Genga. Budinich (according to Schubring a "Trieste architect") makes it credible by a letter first published by him. (See Il Palazzo Ducale d'Urbino. An art-historical study, illustrated by new documents. Trieste-

Trieste. 1904. p. 52. Letter of Luciano Dellauranna to Barbara di Brandenburgo, Marchioness of Mantua. (unpublished document), that Laurana was in business in May, 1465, at Pesaro. The Mantuan Marchioness wishes to have master Luciano from Alexander Sforza back again in Mantua ---. "To have his counsel and advice about his building, promised to be commenced soon". The reply of Luciano to the wife of Ludovico (1414-1478; marchioness of Mantua) is subscribed by him:-- "Humble servant, Lutiano Dellauran(n)a. -- "Dated, Pesaro, May 17, 1465". For the first time we meet with his own signature.

Accordingly Luciano was (1465) in the service of the court of Mantua, and only permitted to go to Pesaro for a few days, it which it is not stated, whether his business in Pesaro had reference to Palace Prefettizzio there.

Many details on it bear the Florentine stamp and not the manner of Laurana, as determined in Urbino and Gubbio, especially in reference to the ground story of the Palace. Magnificent on the contrary are the windows in the upper story, and Laurana may perhaps have given his advice there, but in its entirety the building has nothing to do with Laurana.

What he built in Mantua may indeed be stated, but not the time. As Budinich correctly remarks, Mantua was then a centre of humanistic culture and not one of the latest, as the early appearance of an Andrea Mantegna and L. B. Alberti there prove. In 1465 was completed the works for Marquis Ludovico in Mantua, and at once Luciano went to Urbino in the service of Federigo. His patent of appointment of June 10, 1468, is a later authorization of the rights and duties of Laurana in beginning the Palace, though others differ. (See Budinich). In the documents of the city of Sinigallia, he is called Lutiano da Urbino.

49 Budinich further determines, that Laurana from 1476 to 1475 was no longer in Urbino, but was indeed in the service of Costanzo Sforza in Pesaro, at the beginning of the Rocco there. "the will of master Lutiano, inhabitant of the city of Pesaro" bears the date of Sept. 7, 1479. His death must have soon followed the execution of the will.

That Luciano was a pupil of Brunellesco would not be improbable; whether he designed the portal of the Arsenal in Venice,

and whether at the command of Federigo, King of Naples, he built Villa Boggio Reale, and now had to answer.

In regard to the Palace at Pesaro, W. Lübke reported in his time in the *Zeits. f. Bild. Künste* (1870). His traveling companion was the architect Professor G. Lasius in Zurich. The report is brief and good; only the piers of the arch as described are not of rusticated blocks, but are composed of carefully cut rock-faced ashlar. (Just as on Palace Gondi at Florence). The drawings of profiles are good contributions to the criticisms of the style, and correspond to my own sketches. The lower belt course exhibits the form of a late Gothic pear-shaped vault rib, also the pier capital shows no Renaissance mouldings. Only the archivolts and the parapet bands recall similar ones of the Florentine Early Renaissance. The axes of the 6 arches do not coincide with the windows of the hall, which is well observed. His statements concerning the latter, their form, membering and caps are correct, like the case with A. G. Meyer (p. 52), who erroneously attributes the building to Laurana. "That these windows bear caps supporting a coat of arms" does not correspond. (See Fig. 20). Both reporters have also overlooked, that four of the windows have enclosures constructed of ashlar courses, that are closed above by a straight arch of radial ashlar, and thus diminish the light areas of the windows. Only at the balcony window is this arrangement omitted, where the pilasters enclose the light area with their smooth adjacent mouldings. The horizontal arches on the ashlar jambs must be a later addition. It appears to me to not be excluded, that the existing main cornice is also not the one originally planned, that in its place was rather indicated a battlemented crowning, similar to that on Palace Venezia in Rome, and which can be proved. The erection of the facade Lübke places in the time of the Early Renaissance, in 1508, the year of the death of Guidobaldo, D Duke of Urbino.

According to the *Archivio Storico dell' Arte*, directed by Domenico Gnoli, 3rd year, 1860, Rome, 1891, p. 239-240, Luciano da Laurana and Palace Prefettizzio of Pesaro, C. von Fabriczy believes, that one must decide on a building date in the 14th century from the style of the ornament, without re-

regard to documents. The facade next the Place indeed exhibits its architectural concessions to the 14th century by the arched loggia on the ground level, by the garlands of leaves and fruits in the spandrels, the great space left between the two belts, by the ornaments and the cupids with the festoons, that are connected with the shields of arms. The heavy main cornice ("earnest and majestic") and the failure to carry through the axes of the arches and windows may exclude a later time. I might here recall, that the "majestic" main cornice is of much later date, and was treated as a battlemented cornice on the original structure, (See Section XIII on Palace Architecture), and that of Palace Riccardi by Michelozzo (1414-1472) also has window axes not harmonizing in the different stories, as also one longer side in the court of Palace Doge at Venice (Fig. 23). The motive of the windows of the hall with pilasters, architrave, frieze and cornice, so much employed in antique Roman architecture, must first occur here in the Renaissance with Laurana -- there is no earlier example of it than the palaces in Pesaro, Urbino and Gubbio, and the rights of Laurana must not be lessened! Certainly not. Only it should not be overlooked, that on Palace Letimi at Rimini and also on the Villa at Rusignano near Florence, which was purchased in 1478 by the Signoria, given to Federigo, and was built by Luca Pitti (1440 ?), the motive mentioned appears and is still well preserved. The owner permits one to decide on Brunellesco as architect, and the windows would then be his work, and earlier than those presented by Laurana. (See H. von Geymüller in the great Work on Tuscany and Fig. 24 a). On the contrary, Budinich is of opinion, that the window from Rusignano is not the original work of Brunellesco, that it far rather must be regarded as a restoration of the architect of Federigo, which was then interrupted. The architectural style of Urbino is also sufficiently found elsewhere in the Mark and the Romagna. But nothing yet is proved thereby. A far more beautiful example is found on a mediaeval house at Toscanella. (Fig. 246).

On some carefully executed paintings, where the architecture is drawn beautifully and with intelligence, being in this sense almost unequalled, of Fiorenzo di Lorenzo (worked 1472-

1520) in the Paintings Gallery at Perugia, are represented f facades and forms of windows, one of which in particular harmonizes tolerably with Palace Prefettizzio in its arrangement of the stories, cornices and arcades with medallions, while another window cap with crowning ornaments repeats, how they are still preserved on Palace Letimi in Rimini. The preceding statement of the spoliation of the architectural style of Urbino must be further strengthened by these representations.

When Patzack, in his book on Villa Imperiale near Pesaro, deduces from the statements of Budenich, that he charges Laurana with having erected Palace Prefettizzio at Pesaro in 1465, I believe that I must decide the contrary. Likewise the collections and statements in Burckhardt-Holzinger and Springer-Philippi (1908) in reference to the architects of the Palace, do not correspond to the facts. The form expression and other arrangements on the building rather indicate an earlier architect than Laurana and his time.

16. Architectural Style of Urbino.

But on the Palaces of Urbino, Gubbio and Passionei at Urbino etc., at least on the court facades, it is not the window treatment alone, which has to pass as a characteristic of the architectural style of Urbino, but much rather the vertical subdivisions of the wall surfaces by pilasters between the windows of the different stories. On Palace Passionei at Urbino they are merely painted, in the courts of the Ducal Palaces at Gubbio and Urbino (1480-1490) they are in relief, even though not strongly projecting. Herein Laurana (the authorship remains to him without dispute for the buildings mentioned) follows the precedent of L. B. Alberti on Palace Rucellai at Florence (1446-1451), while masters in Verona and Brescia do not remain behind. The corresponding street facade surfaces with the great and showy windows, on the contrary, are executed without any vertical subdivisions, and in this Laurana follows the precedent (?) of his instructor (?) Brunellesco and the master Michelozzo in their Florentine palace facades, even if the form of their windows has meanwhile become different in his hands.

"Who can think of something stupid or wise,
That the world has not thought before".

Faust. II.

What F. von Reber and Schmarsow already said before 1889 on the position of Laurana is confirmed by Th. Hoffmann in his writings of 1890-1892 and 1904-1905, and also is accepted by others.

Laurana presents nothing new in principle in his facades, but new forms in his window treatment, unless also here Brunellesco attains the rank and contests the claim of priority. Among the many private houses still existing in Bergamo from the end of the 15 th and beginning of the 16 th centuries, P Paravilini (VI, Secular Structures, p. 11, Pl. 46) calls attention particularly to the rich court window in the House of the patrician Maffei, which exhibit the rectangular form and are flanked by enclosing pilasters of the Corinthian order, but without decorated surfaces at the sides, supporting at top a complete entablature with a crowning addition, consisting of cornucopias, dolphins and scroll work, all in perfected beauty and maturity. To determine the author is not possible, but he must stand near the school of Urbino, according to the reserve in ornament on the surfaces of the pilasters. (See free crownings of window caps and figures 24 a and 24 b). In a base panel is inscribed Hoc. Fac. E. Vivens. MDXV. (E. Vivens made this, 1515 ?). The diffusion of this window motive must accordingly have been not very restricted, for it was also familiarly retained in Upper Italy and in Bologna in the succeeding period on great examples. (Bologna, Palace del Podesta)(1492-1494). Vertical divisions of the lower story by half columns, and of the upper story by pilasters; Palace Bolognini (1525), Palace Bevilacqua, now Zucchesi (16 th century). We must not close the consideration of palace architecture in Urbino without recalling the colleagues on great works, who participate in the fame. These are the Florentines Baccio Pintelli and Francesco di Giorgio da Siena. The one first named worked from 1474-1478 as an artist in intarsia in Pisa, and his advent in Urbino in 1479 is authenticated. Prominent is also the activity of Ambrogio Barocci di Milano. He was previously employed in Venice, but when he came to Urbino is again "unknown". A first indication of his artistic activity in Urbino is dated May 4, 1479. By his works he produced a true revolution among the native sculptors..Florentines and

Florentines and Lombards are faithful.

An appreciation of the style of Urbino is clothed in the words of H. von Geymüller; "I know neither a master more illustrious than Luciano, nor an earlier edifice more magnificent than the Palaces of Urbino and of Gubbio, or any form or place to be taken as the first example of the work" (?). Budenich bestows on him praise and appreciation for this expression. (See his work, p. 109).

H. von Geymüller believed himself able to establish (See supplement to L. B. Alberti in the great work on Tuscany), that Laurana had great admiration for the work of Alberti in Florence, who also frequently staid in Urbino, and may have aided him by good advice. (?).

"Supported by his high spirit, by the manysidedness of his training, by the harmony of his rich artist soul, and although highly gifted for architecture, he was satisfied with neither the wealth of his imagination, nor with his practical experiences. He sought for the laws of architecture, studied the nature of its forms, and collected the experiences of antiquity. Thereby he increased tenfold the force and the extent of his creative powers, animated himself continually from new sources, and placed these bounds to his imagination, without which the highest gifts must lead into errors". Accordingly Alberti should be regarded as one of the four great masters with Brunellesco, Bramante and Palladio, on whose shoulders chiefly rests the creative evolution of the architecture of the Renaissance. As working in his spirit should be also mentioned here Ventura Vittoni and Antonio da Sangallo.

17. Bramante.

After the death of Federigo (1482) and of Laurana (will in 1479), with the fall of Sforza in Milan (1499), after 18 years' duration of a fortunate and richly expressed artistical epoch, there occurred a further change in the art of the Renaissance in Italy. Forces were scattered, and Laurana's most gifted pupil, chiefly inspired for architecture, Donato Bramante (1444-1514), the painter from Urbino, turned to the North, to Milan with its rich outlook for artists, where he is first mentioned in 1476 or even in 1472, probably incited to the journey by the Milanese Braccio Ambrogio, working with him in Urbino. On his way he indeed touched at the cities of

Arezzo, Florence, Prato, Pistoja and Lucca, Pietrasanta, Sarzana and Pontremoli, and he passed the apennines in his journey to Milan. These are the places lying on the great mediaeval army route, and that he must visit. But there he must indeed have found a reception similar to that of the Florentine formerly. We see him in the school of Mantegna, and influenced in his architectural works by the finely membered and richly ornamented brick architecture of the Lombard cities.

It was assigned to him to create a new stage in the architecture of the Renaissance, in connection with what Alberti taught and Rossellino built, with what Laurana took from them, and with what existed in Lombardy, where Rodari, Solari, Omodeo (Malaguzzi-Valeri writes G. A. Amadeo) Pedoni and others did not so easily allow the power to be wrested from their hands.

In Milan he learned on S. Lorenzo and in the Roman portico to know better the antique Roman of the grand style, for it must indeed be assumed, from his first series of works onward, that he had at least received the appearance of this from the not far removed Ancona and Rimini. (Arch of Trajan and Arch of Augustus).

What has this hero of the Italian Renaissance created in the domain of architecture during his stay in Lombardy in the time of 1476-1499, thus within 23 years? Much was and will yet be attributed to him, but little has been able to maintain itself before critical investigations. (Also see Dr. Santo Monti. *La Cattedrale di Como*. 1897. p. 80, 81).

A. Ga Meyer is of the opinion, that one must separate the few verified and personally conducted works of Bramante from those for which he only made plans or models, or only aided by counsel and acts. If this could be done directly, good service would be rendered to the history of architecture.

What architectural knowledge did Bramante bring into Lombardy? Indeed only what he had learned on Laurana's ground, and not on his own creations. As a man of 32 years he entered Milan, first as a painter. If he had been busied with architecture from his 20th year, and was inspired toward it by Laurana, then up to his entrance into Milan, he had been engaged for 12 years in this art, and indeed until his master's

left his position in Urbino. He retained the same place as long as his instructor. But the most of the buildings authenticated for Bramante in Lombardy do not entirely bear the stamp of the works of Laurana in Urbino and Gubbio, but they far rather bear the signature of the masters mentioned above, of Milan, Pavia, Como, Brescia, Cremona etc., already often with reference to the changed building materials; burned clay instead of natural stone. The treatment of the windows, portals, and of the monumental enclosures of doorways in the interiors is essentially different in Urbino. The inevitable candelabra supports in Lombard buildings are not brought from Umbria, where pilasters or broad architraves complete the enclosures of the doorways in such a wonderful way. Bramante must have entirely lost his views brought with him from Urbino, if one would attribute to him, for example, certain parts on the Cathedral at Como.

Likewise D. Santo Monti (p. 80, 81, 1897) confirms, that B Bramante came to Milan in 1476, built in Lombardy churches in Legnano, Busto Arsizio and Canobbio (see Burckhardt-Bode, Cicerone, p. 119), that in 1510 he had charge at S. Peter in Rome, and died there four years later, without ever returning to Lombardy. The archives show that Rodari can be given as the sole master for the Renaissance portions of the Cathedral in Como. The passages to the nave on the North and South sides were older, and only the decorative facings were later changed in the style of the time. In the interior of one stands the date of 1509 above the architrave. The statement in the Cicerone of Burckhardt-Bode (5th edition, 1884) thus seems as doubtful as this, that "urn-bearers" alone conduct the water discharged from the roof, and the conjectures expressed concerning the Cathedral in Lugano, the little Church S. Croce at Riva, by which indeed must seem to be meant that in Riva S. Vitale on Lake Lugano, but which certainly was not by Rodari, but rather a rich domed building from the 16th century or even later, and now is ascribed to Andrea Cristoforo Solari, named Il Gobbo (hunchback) (died 1525), but is more correctly to be regarded as the work of Pellegrini Pellegrino (1527-1598). In Milan are generally attributed to him conditionally the works on S. Maria near S. Satiro, i.e., the oct-

octagonal baptismal chapel there, the perspective in relief in the choir of the church behind the main altar of S. Satiro -- which is not exactly to be reckoned as most successful -- the transverse and centre aisles, then the additions to S. M Maria delle Grazie (domed area over square plan with 3 semicircular apses), to him as the "greatest inventor of new architectural ideas, the reformer of architecture in Lombardy".

Correctly and Honorably, the two Florentine masters Michelozzo and Filarete gave Milan, what they knew of the new art in their native city, but already the Lombard Amadeo (Omedeo) had produced examples of this. The Chapel Colleoni in Bergamo was already built in great part in 1475! The first gift of Bramante for Milan was not refused recognition, and also the authorship remains to him without dispute, but it is otherwise with the second, it does not remain faithful. According to Burckhardt-Bode (Picerone, 1884), we see the probably obstinate "innovator" beside the noble style of the Palace of Urbino compete with the rich and luxuriant Renaissance, as it celebrates its triumph on the facade of the Certosa near Pavia, begun in 1491". The work mentioned assumes for S. Maria delle Grazie, that only the lower portion of the new building was erected under the lead of Bramante (1492-1499), the upper being after his design. "The exterior expresses the pure spirit of the Early Renaissance with its graceful boldness (sic). Elegantly graduated enclosures (sic) divided the lower structure with masterly profiles, with its elegance of pilasters, wall candelabras, which "in great part" consist of marble or of terra cotta (what does that matter?), and scarcely had its equal. Here should one learn to prize Bramante as opposed to Omedeo!"

On the contrary, F. Malaguzzi-Valeri (*Italia Artistica*, 35, Milan, 1906, p. 112) states, that for the artistic fatherhood of Bramante on this building, no documents of any kind have been found, and it rather belongs in the time from 1492. He then complains of the uncertainty of the style, the dreary ornamentation, and in some cases are errors opposed to the art of Bramante, to finally pass to the result, that various architects completed this work without creating any connection. Then he says with reference to the investigations of H.

von Geymüller, that on account of the talent expressed in the subdivision of the separate parts, one must believe in the fatherhood of Bramante even without documents, and he then publishes a document of July, 1497, according to which the Duke gave orders to his secretary Stanga to have a model made for the facade, but in which the name of Bramante is not mentioned. Honor is very long delayed!

Professor Tito Vespasiano nobile Paravicino, architect in Milan, says in his *Renaissance Architecture in Milan* (German translation by Gilbers in Dresden. N. D.), that everything on the building appears lacking, and that the activity of Bramante was limited to furnishing good advice, and he is also of opinion, that the building is the work of different architects. Cesar Daly agrees with him in his *Revue Generale d'Architecture* (Paris, 1887) in like manner. He leaves S. Satiro to Bramante as a rebuilding of a very much older baptismal chapel; S. M. della Grazie is without any artistic unity. His countryman, Pasquier le Moine, who visited Milan in 1519 in the retinue of Francis I, became enthusiastic over the building, and declared the Church S. Maria della Grazie to be the most beautiful in the city. Who is the better judge here, the courtier of that time or the architectural critic of today? Here is still the further question, whether the interior or the exterior is spoken of.

At the rebuilding of the chapter house of S. Ambrogio in Milan Bramante was questioned; also Ascanio Sforza, Bishop of Cremona and Pavia had him oversee the rebuilding of the Cathedral at Pavia, so that with the many other things, which fell to him, he could not fold his hands. "By many chroniclers many other works are attributed to Bramante, but which according to documents since found belong to other artists". In any case, it was then as now, that also artists go where the hares run.

As notable buildings apparently by Bramante were previously mentioned Churches of S. Magno at Legnano, Busto Arsizio and Canobbio, as further examples frequently traditional and attributed to Bramante without certain evidence may be mentioned the Canepanova in Pavia, Incoronata at Lodi, S. Maria della Croce near Crema, and S. Maria in Abbiategrasso. To desire

to investigate these and so many others in regard to their originators would lead too far here, and yet on account of the ordinary custom, we must however express justified doubts for some.

According to the archives of S. Magno the plan for the Church came from Giacomo Lampugnani. It was begun in 1504, according to the inscription, completed in 1518, and only dedicated in 1529, according to the inscriptions on the building.

The Church S. Maria di Piazza in Busto Arsizio was begun in 1518 and completed in 5 years, according to the local writer Luigi Ferrario, and from the design of a certain Ballarete, "who is mentioned as a pupil of Bramante". Originally the church had a plain hip roof covered by tiles, and was crowned by a simple lantern. The present roof with ogee section (from a Chinese roof) with its metal covering, like the double lantern and the entire addition like a candelabra, comes from a rebuilding (1610) after a fire in 1598. The paintings in the interior were executed by G. Crespi, according to a date (1532) on the surface of the vault. In the year 1699 the lantern was entirely renewed.

To this Burckhardt-Bode add in the Cicerone (1834):-- The Church may have been built "after Bramante's departure" by Lonati (1517), externally square and internally octagonal", yet the dome with an octagonal gallery has the form of a pyramid (sic) with gently recurved lines, as Bramante intended for S. Marie delle Grazie (in Milan). But between the intention of Bramante and this dome "like a Chinese roof" lie about 100 years! A pity that the beautiful idea of Bramante became fruitful so late.

In Abbiategrasse, two periods are to be distinguished on S. Maria; the time of 1480 (date of 1497 in the arch), and the time from 1497-1615. The numbers on the structures give the limits of the building period. The church possesses no documents relating thereto. Tradition prefers Bramante, and Burckhardt-Bode say, "That with this composition he surpassed all his contemporaries". A single mighty arch rests on two coupled pairs of columns and forms the front, whose gable termination above is lacking. The ground story was begun in 1477. The great round form of the portico arch and of the adjoining

tunnel vault was later transformed into a colossal niche as on Palace Vatican".

These statements can scarcely be taken seriously. The mighty arch mentioned measures 24.9 ft. in the clear span. This piece of art L. B. Alberti had already employed on the vestibule of S. Andrea in Mantua, but the span was reduced about 1.3 ft. The colossal niche in Home measures 46.9 ft., but it neither by its purpose nor by the idea producing it has anything to do with the tunnel vaulted vestibule in Abbiategrasso, and nothing with that in Mantua. There the crown of the arch is 18.2 ft. above the pavement, only 14.8 ft. at Abbiategrasso. In Mantua the abugments for the arch form corresponding masses of masonry, opened and subdivided by slender and plain pilasters, coarse and simply extending without break from the pavement to the crown of the arch. In Abbiategrasso the front arch must be ensured against spreading by an iron tube with the diameter of a fist, above which rises a stone gable with rafter cornice, but in Mantua is a triangular gable enclosed by a stone cornice. The coupled pairs of columns are also placed above each other, and which finally have to receive the arch; already on the Triumphal Arch of Alfonso in 1443 were executed by a Lombard as an enclosure of the arch, no more and no less simply, than it occurred in Abbiategrasso. (Fig. 27).

The architecture of the arched porticos adjoining the portal in Abbiategrasso, that still almost have a mediaeval form, belongs to the transition style. The details of the arch and of the tunnel vaulted vestibule are of unequal worth. The arch bears the date of 1477 (? correctly 1497). To this time corresponds the greater part of the lower order of columns, whose shafts show a strong swelling with mediaeval "base knobs" still on the shafts. The capitals of the columns are beautiful and betray the trained sculptor. The piers of the lower order and the details of the entire upper order are pattern-like and belong to a later time, the arms and niches with enclosures are Barocco.(1615). Nothing less than beautiful are the closed side walls above the lower colonnade, so far as they rise above the roofs of the surrounding porticos. What still remains for Bramante? The grandeur of the motives?

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Master Martino and master Alberti have already earlier carried it out with sounder construction, and the simplicity of the details is based on the same illusion as the novelty of the idea.

For the erection of S. Maria della Croce in Crema was called the architect Giovanni Battaglio from Lodi, "prince of the architects of his time", who was settled in Milan, and from 1488 to 1489 led the building of the Incoronata at Lodi. Influenced by Bramante (by what building?), he must have designed the plans of the Church at Lodi and of that at Crema. Battaglio made a model and by contract was to have the building complete in 3 years, for which he received 300 golden ducats (a ducat = 4 lire + 10 soldi; probably about a dollar). In the year 1490 the corner stone was laid, then arose a dispute between the committee and the architect, who tore up his drawings in a rage (1493). Further work was led by G. A. Montanaro from Como, and in 1500 the building was completed. It is to be recognized by the formalism, where Montanaro began his work. The ugly columns, the subdivisions in the interior and the ornaments belong to the time before 1700. Thus the school and not the master must have worked here.

Likewise in Canobbio is Bramante made responsible for the erection of the Church. The archives of the church there contain no statements of any kind in regard to his cooperation. The gallery around the dome is constructed of thin granite slabs, and with its dry and awkward details does not indicate Bramante. A manuscript in the Library Comunale at Canobbio of the time about 1600 names Pellegrino di Pellegrini as architect of the Madonna della Pieta. ²⁴

Note 24. See Strack, H. Central und Kuppelkirchen der Renaissance in Italien. Berlin. 1882. Original work and appendix.

We shall let the matter rest on this evidence. Not all is gold that glitters,! After the fall of their princely employer, Lionardo de Vinci and Bramante from Urbino shook the dust of the Lombard plain from their feet, one going through Mantua and Venice to Florence, the other traveling the mediaeval army route to Rome; the latter extending his tour of investigation to Naples, probably at the incitement of Ascanio sforza, studying the antique structures by measurement and

drawings.

Here the genius of Bramante created a style at Rome in only 15 years (1499-1514), rich in influence for the succeeding time. (See A. G. Meyer. III).

The sources for the origin of his works flow rather more clearly, than in Lombardy, even if not entirely pure.

The art stone of Lombardy, Ligurian marble, recedes, the sedimentary and less dense limestones take its place, just as previously in Tuscany the fine-grained sandstone had already supplanted all other materials. Bricks and volcanic kinds of stone, tufa and peperine, were then more employed as subordinate materials, for which then stucco must provide the basis for an artistic treatment of the surfaces of the facades. But therewith brick construction is also not excluded in this phase of the Renaissance, for it yet maintained itself in Bologna and other places, even down to Siena, in buildings of full worth.

R. Redtenbacher believes (p. 183), that Bramante in his palace structures in Rome was connected with his predecessors, L. B. Alberti and B. Rossellino, whereby he indeed forgets to say, that the most direct influence upon his works, the elevation, the antique without any side flavor, the Dalmatian Laurana had in Urbino and Gubbio, who certainly again stands on the shoulders of Alberti.

89 A series of vast palaces and private buildings arose in Rome at about the change to the 16th century, or about 1500 of our calendar. What is shown and desired in this, is not connected with the Lombardic-Venetian Early Renaissance, but so much the more with the Tuscan and the architecture of ancient Rome. The North developed itself further by itself then on the hereditary ground, and Tuscany adopted less directly from its great son Leon Battista Alberti, but so much the more did papal Rome by the mediation of Bramante. (See on this Gnoli, p. 176, 331). ²⁵

Note 25. Archivio storico dell'Arte. Year 5. 1892. "Cancellaria and other palaces of Rome attributed to Bramante". I, II, 176, 331 et seq.

18. Cancellaria and Palace Giraud.

Two works, the Cancellaria and Palace Giraud, appear in the foreground and are the mightiest evidences of the new tendency

in the progress of architectural creation. By grouping the masses, by the stronger accenting of the horizontal and vertical subdivisions, even if but slightly indicated at first, by the addition of belts of stories to the window sill courses, by doubling the vertical divisions (pilasters and half columns), by the omission of the previously usual proportioning of the main cornice to the entire height of the building, in the sense of a finely graduated proportional development of the higher parts of the structure, finally by returning to antique tradition, new impulses were introduced. To these a is added the most refined profiling of the architectural members, in whose treatment and functions the procedure was according to antique conceptions, and further still the restriction of the ornamentation to the window enclosures with the aid of varied materials, with reference to antique models. Thus for example, the windows of the Cancellaria are almost faithful imitations from an antique tower structure at Verona and are executed in white marble, while the adjacent wall surfaces, pilasters, belts and cornices are of yellowish travertine, and the wall surfaces over the court arcades are constructed light red bricks. The arched windows are not replaced by rectangular windows with straight lintels, as Laurana did this before him, but rather the archivolts are harmonized with the horizontals by frieze and caps. The simple pilaster subdivision of the small surfaces by Alberti and Laurana is replaced by the "rhythmic bay", which moreover Alberti had already adopted for church architecture. (S. Andrea in Mantua).

On the Bramante question, Eugene Müntz already expressed himself as follows in his work; *La Renaissance en Italie et en France*. Paris. (1885). p. 168.

"Then Lombardy enters on the stage, and the magician, called Bramante, charms and dazzles us alternately by his grace and his inexpressible imagination, qualities to which will be added majesty and splendor, after the artist is settled at Rome". As his principal works, that carried out the flight of the new architecture -- "this new attempt in the art of building" -- are mentioned the sacristy of S. Satiro, the Church S. Maria della Grazie in Milan and the Cathedral at Pavia, where the new tendency shows, that just as well as preceding epochs,

it knew how to take into account the peculiarities of natural stone and bricks. It may also be said, the French technicians have practically understood, and among them the great Rondelet, by the expression "art of building", the science of construction. For the art of building they have the word "architecture".

E. Müntz further states, that in civil architecture of the Florentines the mode of execution at Palace Vecchio for a long time remained the ideal, while it adhered to tradition: on the streets the rusticated facade with few windows, in the interior being the ornamentation. (Brunellesco, Michelozzo). In opposition to this conception stand the masters Alberti and Rossellino, who did not desire to omit the decoration of the street facades, and according to antique Roman custom required the subdivision of the wall surfaces by pilasters with a greater number of windows; "such elegant and charming facades".

In Urbino Luciano da Laurana goes one step farther by the benefit of his details and by the greater harmony of the whole. He prepared the advent of Bramante in Lombardy (Milan, Vigevano), thus becoming the John Baptist of the coming saviour, who after the fall of Sforza should appear at Rome with like success. So far we agree, and I might state, that already in 1885 -- thus earlier than von Reber, Schmarsow and others -- E. Müntz fixed the position of Laurana in regard to his predecessors and successors. Likewise in his judgment of Michelozzo, Filarete, and their employers in Florence and Milan are we of the same opinion. The latter were the patrons and protectors of the arts and sciences, the Visconti and Sforza in Milan, and the Medici in Florence. E. Müntz is of the opinion, that one protector was a financial genius, and the other was a knightly war hero, whose income amounted annually to 30 million francs (\$6,000,000), -- Ludovico il Moro. "Without him, the Italy of the Renaissance would probably have counted one jewel less. By his care, the still latent genius of the native artists was fertilized by contact with the great man from Urbino and the great Florentine Leonardo".

At all times at his command must Bramante and Leonardo da Vinci be present at the court festivals. He paid them irreg-

irregularly for this, and Leonardo said to him once, that under these conditions he must have recourse to another master; 6/ then he compensated them royally for their works. Bramante settled in Milan (according to Müntz) in 1472-1474. Free from archaeological prejudices, "playing with the most difficult problems of the art of construction, and modeling a monument with the same freedom, -- he honored Lombardy by his exquisite creations, churches, monasteries, palaces and villas, whose indefinable charm can only be characterized by designating them as the Bramante style". That was his "art of construction", he did not always stand best, must indeed be proved by various occurrences; the assertion that Lombardy was flooded with churches, villas, palaces etc. by him, can only be maintained with limitations, as one can only agree with reservations to the views of H. von Geymüller, that the combination of piers and arches, adopted from Lombard buildings, was a peculiarity of his structures. The Canonicate (canons' houses) near S. Ambrogio in Milan, the loggia of the Palace in Vigevano, the Cancellaria, the small court of S. Maria delle Grazie in Milan, and various other buildings attributed to him show round arches on columns.

According to Müntz, Bramante in common with Leonardo in 1490 received the order to prepare a model of a dome for the Cathedral in Milan; but a decision was not executed. Among the artists, who were to continue the building of the Castle, Bramante was also named.

There are now named as the chief works in Milan, which were intended by Ludovico il Moro to be erected, the baptistery of S. Satiro, the Church S. Maria near S. Celso, the cloister near S. Ambrogio, the Hospital, and the completion of S. Maria delle Grazie. To these succeeded no less numerous private buildings, as for example, Palace Marliano, destroyed in 1782. (?). Further are the Palace in Pavia, which competed in magnificence with that in Milan, beautified by Ludovico, the Cathedral at Pavia begun in 1483 by Cristoforo Rocchi, for which Bramante's advice "appears" to have been followed; also perhaps for the Gertosa near Pavia. From Bramante must also come the loggia with 7 openings at the Castle in Vigevano (now walled up), as evidenced by the columns, bases, capitals, the k

keystones of the arches and the profile of the archivolts. On the ground of the evidence of H. von Geymüller, this may be placed beyond doubt; "permitting no doubt concerning the author". Likewise the art writers of Baedeker (Springer, died 18-91; Dr. Propping in Godesburg) share this opinion, and they also meet with the style of Bramante in Lombardy at S. Maria in Busto Arsizio, Abbiategrasso, S. Maria della Croce in Crema, at the Cathedral and Church Canepanova in Padua, and at the Incoronata in Lodi.

Müntz also guarantees the cooperation of Bramante on the Cathedral in Como, "at least under the indirect inspiration of Bramante". From the Roman period after the fall of Ludovico il Moro, he only states, that Palace Giraud at the order of Cardinal Castellesi, the Cancellaria at the command of Cardinal Riario, as well as S. Pietro in Montorio with the exquisite little circular temple", were built by Bramante. Therewith the architectural activity of Bramante in Rome ended. They caused him not much thought, like those of Lombardy. Both do not exhibit a definite position and assured results of research.

In a supplement to the journal; The Royal Institute of British Architects; The School of Bramante by Baron H. von Geymüller. London, 1891, the architectural investigator mentioned takes position on the Bramante question in an illustrated supplement published in English, and there states:--

Bramante in Lombardy (p. 95). Influenced by Florence, are to be mentioned those buildings before Bramante's arrival:-- Gate Giovia at the Castle, Chapel Portinari and Hospital Maggiore at Milan. (Arrival of Bramante assumed in 1472-1474-1476).

19. Bramante's Architectural Works.

By Bramante after his arrival were then executed.

1. S. Maria near S. Celso.
2. Sacristy at S. Maria near S. Celso.
3. S. Maria della Quercia.
4. Canonica of S. Ambrogio.
5. Continuation of Hospital Maggiore. (1485 ?).
6. Church S. Maria in Abbiategrasso (?), as a new element in a new style.

7. Cathedral at Pavia. 1488. Advice.

8. Invitation for a model for the crossing tower of the Cathedral at Milan.

9. Bortal of Cathedral of Como (1491 ?), and the loggia in the Castle at Vigevano.

Bramante built in Rome. (p. 166).

10. Palace della Cancellaria.

11. Palace Giraud.

12. Tempietto (little temple) near S. Pietro in Montorio.

13. Court of S. Maria della Pace.

62 And in his last manner.

14. S. Peter, Palace Vatican, Palace S. Biagio (S. Blasius), Church Santa Casa at Loreto, and the papal Palace of Justice.

What must be taken from or added to these, time must teach.

The work of Ferdinando Cassina -- *Le Fabbriche piu cospicue di Milano* (Milan. 1840) -- contains only a few dry notes on Bramante's buildings in the city, and contributes nothing to clear up Bramante's activity in Milan.

The pilasters on the facade walls lose the panel mouldings and the ornamentation of the panels, also the form of the consoles on the main cornices is the simplest conceivable, just as on the Colosseum. Thus at the Cancellaria and in the court of S. Maria della Pace. Fruit garlands and like ornaments have disappeared.

These are very influential changes in palaces and houses, with those here preceding; but they are true only for Rome and not for the Renaissance of Upper Italy. A freedom was permitted by the masters of this time, those from Urbino excepted; they did not allow themselves to be bound in the interiors of living rooms by the location of the floor beams and the normal height of the window parapets, and were not confused by what the desired proportions required on the exterior. (Fig. 25).

The great Federigo of Urbino desired to sit in the window recess, and to be able to see out on the streets from the floor of the room; the occupants of the Cancellaria must first climb by steps to the place of the seat, as in the contemporary buildings, if they desired to have an outlook on the street. At the cost of the convenience of the owner, the archi-

architect retained a free hand in fixing the subdivisions on the facade in this way; he placed his belts as it pleased or suited him; as it might also profit him to conceal a church (Fig. 26),²⁶ like S. Damaso at the Cancellaria, behind a passage with normal windows of living rooms, for the benefit of the unity of the facade. One cannot now term this as required by necessity ! Nor is it logically conceived. Whether the creator of this innovation in palace architecture be then named Bramantè or not; an obscure master mason from Bologna or a Florentine building contractor, he certainly was not, as men now like to assume, even if the dates and the documents for Bramante deny this. In general only as an art work can be considered the facade with two entrance portals to the court and the church.

Note 26. From Lübke. Geschichte der Architectur. Leipzig. 1886.

Whoever created the court of the Cancellaria, with its arcades on noble Doric columns with their showy capitals, the stories above with their refined subdivision by pilasters, and the finely weighed proportions of the windows therein, whoever employed the rhythmic bay so finely, remains for all time an architectural artist of the first rank, whom no criticism can belittle or overthrow. One must be already destitute of all good taste and of all artistic feeling to desire to grumble here. But aside from the few certainly accredited works, what remains to him is his architectural activity at the Vatican, both on the Palace as well as on the most wonderful Church of Christendom, the Cathedral of S. Peter, even also if both were not brought to an end by him, and if not everything exhibits on these the degree of technical perfection, that must reasonably be required. He wished to build rapidly, and consequently he did not always build substantially; his successors on the works frequently had to make good again the defects. Bramante planned S. Peter in combination with Palace Vatican, and on April 18, 1506, was laid the corner stone of the former.

The principles established by Alberti, adopted by Laurana, and that Bramante had brought to the highest perfection in Rome, also remained in the other regions of Italy not without

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consideration, as shown by Palace del Consiglio at Bologna, the loggias in Verona, and the City Hall in Brescia.

Bramante's most inspired pupils and colleagues remain:--

1. Dolcebuono. (Died 1506).
2. Raphael Sanzio. (Died 1520).
3. Vittoni. (Died 1522).
4. Peruzzi. (Died 1523).
5. Dosio. (Died 1533).
6. Falconetto. (Died 1534).
7. Baccio d'Agnolo. (Died 1543).
8. Giulio Romano. (Died 1546).
9. Antonio da Sangallo. (Died 1546).
10. Genga Giovane. (Died 1551).
11. Sanmicheli. (Died 1559).
12. Michelangelo Buonarroti. (Died 1564).
13. Sansovino. (Died 1570).

The development of the inheritance from their master sometimes timidly, sometimes more freely, weighed by the standard left to them, and increased the artistic powers of their time. The limits were extended, but the problems at the same time took more numerous forms, until finally under the last great Florentine, the mighty Michelangelo Buonarroti (died 1564), the Renaissance attained the climax, but also after reaching the apex, it must prepare for the descent. As architect of S. Peter in Rome, he satisfied by his Cathedral dome the "longing of Italy in the domain of Christian architecture".

This new and last period of the Italian Renaissance again has some peculiarities in the domain of palace architecture; these are the introduction of the coupled pilaster as a vertical subdivision in the separate stories, but with its inclination to importance and greatness in the mode of expression, it frees itself from the status of the small pilasters in the stories, and returns to the tendency of antique temple architecture; to the combination of half columns or pilasters with the masonry of the story, extending from stylobate to cornice, and the arrangement of windows and niches between them.

Models:-- interior of Temple of Jupiter in Baalbec, the Temple of Rome and Venus at Rome, the exteriors of Temple at Tebessa, of Temple of Augustus at Nimes (Maison Carree), of Tem-

Temple of Vesta at Tivoli, the exteriors of Temple at Tebessa, of Temple of Augustus at Nîmes (Maison Garree), the former with windows in the enclosing wall, the Temple of fortuna Virilis at Rome etc.

In other words, they created the colossal order and therewith the predominance of verticals in the subdivisions of the facade. But this also again was only completed by the transition step; the innovation did not appear directly and suddenly.

The master of the cancellaria timidly handled the colossal order on both the court and street facades, which there enclose a high and a low story, and likewise at palace Giraud. The motive is expressed with somewhat more certainty by Peruzzi on the Farnesina at Rome, by Raphael on Villa Madama and Giulio Romano at palace del Te in Mantua, and this occurs in the full extent -- it is no longer a groping but rather is employed in the most complete manner -- on Palace compositions and on the Capitol in Rome, on Palace Municipio and Palace Borto in Vicenza, on the Palace near Caprarola, by Michelagnolo²⁷ (died 1564), Vignola (died 1573) and Andrea Palladio. (Died 1580). Likewise Serlio, pupil of Peruzzi, adopted it for his "villa outside a city". (See Example 17 in Section XIV). It was the followers of Michelangelo's related masters and theorists, who played the highest trump on this.

Note 27. So written according to Gaye and Corteggio.

20. Michelangelo.

"Michelangelo becomes a new hero and defender of the rights of artistic freedom and of its obligations, -- he is the defender of the primary right of the spirit opposed to the materials of technics, of the ideal opposed to realism".

As already stated, he owes his world fame as architect first of all to the erection of the Church of S. Peter. H. von Geymüller expresses this strikingly and beautifully, when he says:-- "here has Michelangelo harvested what Bramante sowed earlier". Internally with the exception of the dome, all effective excellencies of this wonderful structure were left by Bramante, which his successor was unable to botch". Michelangelo often said to Vasari, "that he was the executor of the design and arrangements of Bramante". One sees from this at

least, how "great Jupiter thought of Bramante", which the historians of art might notice, at last. In the dome of S. Peter the artist was victorious over "noisy opponents", the colossal order over anarchy, heaven over the excited earth. He listened to the class of men filled with nobility of soul, goodness of heart and the best intentions, but at the same time by their acts, their bitterly evil words and furious conjectures, strike bloody wounds in their nearest friends, who possess talent indeed for endlessly continuing and making others unfortunate. His "Moses" was therefore so great and unique in the world, since he could represent in him the love, the rage, the indignation and the storms of his own great soul.

67 The work on Tuscany by Stegmänn-Geymüller presents such magnificent drawings and illustrations, that one is amazed and enjoys them -- but how many read the beautifully expressed thoughts and principles of Geymüller? How many constructors have studied the text volume of Le Tarouilly?!

With Michelangelo and his school and the so-called theorists the period of the Renaissance ends in 1580. What must next come -- came. And again as the sequent appearance of the preceding, the unbridled and completest subjectivity in creation in the architectural domain, as expressed in the so-called Barocco style, that represents no new art. It speaks still the same language as the Renaissance, as previously stated, but a barbarized dialect thereof, and Burckhardt says of the same in 1875; "My respect for the Barocco diminishes every hour". (See page 28).

Its most distinguished supporters are:--

Giacomo della Porta	(died 1604).
Domenico Fontana	(died 1607).
Carlo Maderna	(died 1639).
F. Borromini	(died 1667).
G. Bernini	(died 1680).
Nicola Salvi	(died 1735).
F. Juvara	(died 1735).
L. Vanvitelli	(died 1773).

And the one of them all, Guarino Guarini, who went the furthest with his buildings in Messina, Turin etc. (died 1683). We have come to the end.

The Renaissance became a world style, continued to this hour, and it will be tried further, until it is succeeded by purely utilitarian construction or by the colonial style, or till "art dies", according to Auburtin.

In the latest published picture books of Corrado Ricci, the author makes known, that now the last phase of the Renaissance -- the Barocco style -- with its rich domain would be disclosed by scientific research, but that the exhaustive material for illustrations is lacking. We experience astonishment and amazement, that the good works created in the Barocco time may be intimately connected with modern life, so that the Barocco style with all its art creations becomes the domain for the researches of the "young men"-- Gurlitt, Wölflin, Schmarsow, and the deceased Riegl. What of the new world brings, have we lived through already. We shall give of the old men here, whatever is necessary for an understanding.

21. Group of Brunellesco-Michelozzo.

The group of Michelozzo-Brunellesco, pioneers of the Renaissance in Tuscany; Pietro da Milano (1435-1443) in Naples; Alberti, and with him the brothers Antonio and Bernardo Gambezzelli, the former called Rossellino; Laurana, Bramante, Leonardo in Upper and Middle Italy, among whom the Lombard Pietro and the Florentine L. B. Alberti frankly made use of the antique, and made it known to them, are individuals, with which genius then busied itself to a high degree. Their future, their course of development and the works actually belonging or merely attributed to them, will be eventually known, based upon assured statements and documents. Men are on the search for the positive. Happy is he that finds this. Besides the investigation of the sources proceeds the call for what is stated by the people. Much is there deserving consideration. What the Tuscans first mentioned undertook, we know approximately, yet not so much, that we have determined with certainty by documents, the master for Palace Pitti, this corner stone in the history of Italian palace architecture. What now exists is the product of four centuries. (See Palace Pitti in Section on Palace Architecture). The Triumphal Arch of Alfonso in Naples, the work of Pietro da Milano, was only in recent years fixed as the earliest work of the Renaissance for a

particular case, on which the architecture of Rome was frankly employed.

22. L. B. Alberti.

What is said of the great L. B. Alberti on the part of the learned and the ignorant? Even the opinions of otherwise reliable investigators do not agree as to the value of his works. Some call him highly gifted, meriting fame, a tireless author and connoisseur of the arts and especially of architecture, who was great as a theorist and very prominent as the first learned writer on architecture, but who was since overestimated, and only the latest researches have succeeded in limiting his fame and the extent of his activity. He had no great influence on the architecture of his time, and yet much is due him for the grand development of the architecture of the Renaissance as an addition to Antique-Roman architecture.

These complaints are all from the same mouth! (See von Stegmann in the work on Tuscany). In the appendix to the same work, the former associate author, H. von Geymüller, says about the contrary, and indeed justly.

23. B. Rossellino.

Bernardo Rossellino has now been elevated as a representative of Alberti, who as a "school-forming architect stands much higher than Alberti". -- What Rossellino executed in Pienza is known and confirmed. I believe that in spite of much beauty, Alberti in his lifetime would not have disputed it with him; but it is hard that men now desire to deprive Alberti of Palace Rucellai in Florence; just as hard as the assertion, that Rossellino should have freed the Renaissance in Tuscany from the joy in decoration adherent in the 14th century. Where is then to be found this joy in the first fruits of the Renaissance in Tuscany? Certainly is it in the not quite beautifully painted court of Palace Piccolomini in Pienza, which still passes as an undisputed work of Rossellino! To elevate this man, the supporters of this opinion promise to "first make known briefly the circumstances of the life of the artist". The description commences with the words:-- "unfortunately we know of this as much as nothing at all, particularly of the youth and period of development! That is to be lamented in this case". -- I am of the same opinion, it is no

better for that. -- Therefore let us leave the honor to Alberti! And if even the decision of those mentioned on the details of Palace Rucellai in Florence, Palace Piccolomini in Pienza and Palace Piccolomini in Siena lead us to recollect, we shall yet more be strengthened in our testimony for Alberti. Royal adorers and colleagues of the great master Alberti may indeed have been both Rossellinos, but they did not excel him in their works. How in the Renaissance and in practice, the position and distribution of the work among individuals may have been at a building in comparison with our conditions, we do not accurately know; even if Alberti says, that one should not run after an owner, and should not bother himself about the execution of the details at the place, but the architect as an artist should much rather occupy himself with the preparation only of accurate and good drawings and models. Likewise in our time the method for architectural works is not the same everywhere. The Leipziger Illustrierter Zeitung (No. 3563, Nov. 1911) gave the building of the new Palace of Justice at Cologne with the Note:-- "After the design determined in the Ministry of Public Works under the technical and artistic supervision of Royal Building Councillor - - - -", and Westermann's Monatshefte (Heft 3, Nov. 1911) mentions the Evangelical Church in Skarzinnen with the laconic subscription:-- "Architect; ministry of Public Works". Thereby one is connected in style with the Barocco epoch, that period in which subjectivism was predominant.

Filarete conceives on the contrary, that the position of the architect and the state of affairs in building was well known as rather simple. The architect must care for everything, and he is of opinion concerning the owner, that the latter should learn drawing previously, before he commences anything and desires to understand plans. (See Section on Secular Buildings, Preface).

And now first the great Bramante, to whom nothing will remain excepting the four piers of the Church of S. Peter with their arches, the Tempietto in S. Pietro in Montorio, the court of S. M. della Pace and the courts of Palace Vatican in Rome, in Upper Italy the rebuilding of the sacristy of S. Satiro, the court of the Canonica of S. Ambrogio, and with less

probability the portico of Church S. Maria near S. Celso in Milan, for which Dolcebuono is made responsible. The Cancelleria and Palace Giraud in Rome (According to Badeker) were built in the time from 1486 to 1495 after the designs of a Tuscan master with the strict carrying out of the antique orders, indeed by the "Unknown" well represented in the museums in Germany as "unknown". How is this related to the popular statement? In a little book, "Various Letters of Count Gaspare Gozzi, Rome, 1836", that indeed can make no claim to accurate researches in the sources, but otherwise is written in good Italian, may be read the following, which is not without interest.

Bramante learned the beginnings of the art in Urbino, then went to different cities of Lombardy, one knows not which nor why. Then he took up his residence in Milan and began with painting. He was in Rome, Florence and Ferrara. In Milan with Leonardo da Vinci he was esteemed and preferred by the Duke Ludovico Sforza. It is said, that the Canonica of S. Ambrogio, the sacristy of S. Satiro, and the portico of Church S. Maria near S. Celso are works by him, "were works by him". At the invasion of the French into Lombardy, he went to Rome, where he examined and measured the ancient works, for this purpose also going to Tivoli, to the Villa of Hadrian, and to Naples. Men said of him, that he had a "great facility of invention and the greatest rapidity in execution". He was in condition to realize the great architectural ideas of Pope J Julius II. He built rapidly, but allowed a lack of the necessary solidity. The impetuosity of the Pope pressed him to do this, the "restless vehemence of Julius". For Palace Vatican he furnished "a magnificent and artificial design". He built the round temple near S. Pietro in Montorio. "The erection of the Vatican Temple (S. Peter) was commenced under the care and direction of Bramante". With inconceivable rapidity the old buildings were torn down to obtain a site for the new building.

Andrea Guarina da Salerno (1517), three years after the death of Bramante, ventured to publish a libel under the title:-- "The Ape on the building of S. Peter", in which he characterizes Bramante as a "mad artizan, the destroyer of the antique

temple as well as of Rome and of the entire world, if he had been able". The obsequies at the death of Bramante were described as magnificent by Count Gozzi, the entire papal court and the professors of the fine arts participating therein.

24. Leonardo da Vinci.

And what the itinerant preachers for art knowledge say of the great Leonardo at this time is:-- he was a magical phenomenon, "not to be comprehended by the understanding and scarcely by feeling". He was painter, sculptor and architect, engineer, mechanic, musician etc., and as the latter was he called to the court at Milan. What he accomplished as architect remains unknown. Like Alberti, he was a natural child; his youthful works have disappeared, and otherwise the number of the works of this man, attributed with certainty, is very small. His model for the equestrian statue of Sforza was broken up, only fragments remain of his work in competition with Michelangelo, yet his Last Supper in S. Maria delle Grazie in Milan remains, an amazing work for all times and future generations, with a copy thereof in the Church near Tesserete in Ponte Capriosca.²⁸ His literary works are placed in the Codice Atlantico, which has been printed in very recent years. From nothing, God created the world, but so much still remains for the historian, to stamp him as one of the greatest of the Renaissance.

Note 28. See Rahn, R. Kunst- und Wander-Studien in der Schweiz.

On the lives and creations of those born later, the material is more assured, even if the architectural and working drawings of the masters are wanting, yet sketch designs still more frequently exist, and at various places are most beautifully executed wooden models of public and private buildings. (Como, Pavia, Bologna, Rome etc.). The confusion in the decisions on the value of so much work, on the mode of its origin and the personality of the artist can only be solved by time.

For orientation must be given the following, although it is self-evidently not exhaustive.

The names of Donatello and of Mantegna -- of Bramante and of Leonardo illuminate the Lombard Renaissance!

The latter wrote in his famous letter to Ludovico Moro:--

"In architecture I believe that every other art grew up". This quotation by Gotthold Meyer (page 125) is accompanied by the words, "that no architecture by him is known -- and yet he is justly famous therein by his sketch books, with the numerous and quickly made drawings for utilitarian and artistic buildings, which contained more architectural ideas, than the stoney life works of many much occupied Renaissance architects". -- Which certainly must be proved by examples, unless this becomes merely a phrase. First the saying for the architects is nothing else. The works since attributed to Bramante in Upper Italy and especially in Lombardy, as already stated, for a small portion are confirmed by documents; only the sacristy of S. Satiro (Fig. 29), the atrium of Churh della Beata Vergine near S. Gelso (Fig. 30; according to others Dolcebuono in 1490; see also Cassina, *Le Fabbriche piu cospicue di Milano*, 1840), the atrium of the Canonica of S. Ambrogio (Fig. 31), with some injured shafts of columns, which through the fate of Cardinal Ascanio Sforza remained unfinished, all in Milan, express in contrast to the architecture of Amadeo and of other great Lombards, a changed and self-conscious language. All overloading with members and ornaments is avoided, the indeed rich but not always logical or beautifully developed candelabra supports (Fig. 32), these special characteristics of the Lombard Renaissance recede or entirely disappear. (Pavia, Cremona, S. Maria delle Grazie in Milan, Como).

A new spirit inspires his works, which makes itself apparent in higher powers in those succeeding at Rome. There rises the Tempietto in the court of S. Pietro in Montorio, the court of S. Maria della Pace (1504), the arcaded court of S. Damaso and of Palace Vatican, in a spandrel of which stands the date of 1513, whose columnar loggias were added by Raphael after the death of Bramante. (Fig. 33 a after Heemskirk; architectural condition of Palace Vatican 1532-1536). To this is added the great court of Palace Vatican, 721.8 ft. long and 234.6 ft. wide, with its vast corridors.

26. Reconstruction of Vatican Buildings.

Bramante's great problem was a combination of the different Vatican buildings, to establish an entire reconstruction of the same with new apartments.

Not the side structures of the court, but much rather the narrow terminal wall next the Belvedere forms the chief point of the entire design, with the exedra, a niche 47.6 ft. wide and spanned by a quarter sphere, in the present rear court of the Pigna, over which rises the festal semicircular portico and its termination like a temple. A drawing by Dosio (born 1533) gives us the condition of the court and its terraced arrangement with the adjacent buildings in the time between 1514 and 1558. (Fig. 33 b). (The views of Rome drawn by Dosio were engraved and published in 1566). The great niche is enclosed up to the imposts, and the adjacent wings are carried to the same height. The building at the right side is one story high, the stairs and garden colonnades extend through three stories; these portions were alone completed during Bramante's lifetime. (See Simil and Geymüller and also the accompanying Fig. 34, a, b, c). The architecture of the narrow end shows us according to this Figure on the right and left of the niche, substantially that of the Cancellaria; the rhythmic bay, the colossal order and the wide spacing of axes (see the representation with Villa Buildings), as well as the accenting of the heights of the stories by an antique entablature with a window parapet in three divisions resting thereon, and the main cornice proportioned to the height of the pilasters.

Must the great Bramante have become a plagiarist here on his greatest work? That is scarcely credible! Gnoli represents (page 344) with his statements a portion of the facade of the longer side of the court, after Simil. Why does he not give the end? For myself, this is the piece of evidence, that the artist who made this, must also have built the Cancellaria and Palazzo Miraud, since all architectural principal accents and motives from them reappears in the Belvedere court. It cannot be imputed to a capacity like that of Bramante, that it worked after the works of others, particularly with such audacity! Let us leave to the emperor whatever belongs to him!

27. S. Peter in Rome.

And now to the greatest, which the Italian Renaissance has created, to S. Peter's Cathedral in Rome. Serlio (Book III,

Plate 64; edition of 1584) tells us of its architects.

75 It was in the time of Pope Julius II, that one Bramante from Casteldurante in the Duchy of Urbino, a man of extraordinary intelligence in the domain of architecture, who with the assistance and authority assigned to him by the said Pope, who may be said to have aroused good architecture, that from the ancients to the time when it was buried, the same Bramante, who made the beginning of the splendid architectural work of S. Peter in Rome. But at his death, he not only left the building unfinished, but even the model in different parts, so that in his place certain men of genius must occupy themselves with the matter, among others the painter Raphael from Urbino, who was also conversant with architecture, and in Bramante's place prepared a very beautiful drawing, (dome with nave), in Serlio's opinion, in which all dimensions of the commenced House of God were retained, which could the more easily occur, since in Bramante's plan everything was well proportioned, and therefore from a part, the measure of the whole could be deduced.

76 On four mighty piers, which were connected together by semicircular arches, and which at the angles were bound together by pendentives, should rise a gallery (drum ?) adorned by columns, which was designed to support the great dome. All this Bramante arranged before his death!

The adjacent illustrations after Serlio (Figs. 39 a and 37 a) show the ground plan of the drum, the section through it and the dome, whereby (according to Serlio) one may understand, that in this case Bramante acted with more boldness (courage) than excellence, when he would load such a vast mass and such a heavy weight on the supports and their foundations, that required the very best kind of foundations in order to remain safe. He did not desire to place the drum on four arches at such a height, also not on scarcely completed piers, that had already cracked in certain places.

But none the less did he desire to give out the drawing, since the design was beautiful and ornamental. And to not become prolix, he assigned certain dimensions for the construction of the drum.

First external dimension of the column in height = 5 palms.

That of the second inner colonnade = 4 palms. (Diam. ?).

That of the third in the interior = $3 \frac{3}{4}$ palms. (Diam. ?).

The clear measure of the gallery = 18 palms.

The diameter of the lantern = 36 palms.

There it is stated, "the said temple is measured in antique Roman palms (and it may be said that the Roman palm measured 0.7284 ft. = 8.741 ins).

The clear diameter of the drum given by Serlio translated into feet gives $(188 \times 0.2234 \times 3.28) = 137.8$ ft.

77 The measurements of Le Tarouilly-Simil give 135.83 ft., so that the measurements stated by Serlio must accordingly be taken as reliable. Not entirely so is the rather confused drawing of its section, in which the different heights of the columns of the drum do not agree with the dimensions given.

According to the plan of the drum, Bramante based it on the principle of the execution of the Roman Pantheon -- 3 piers separated by 3 interposed niches, which in the design for S. Peter are transformed into window openings adorned by pairs of columns. According to Serlio, the latter appear to be connected by architraves, that had to receive a part of the burden of the dome. The latter is not uniform, but is rather distributed to certain points of the supports, and indeed not in the most advantageous sense. The four piers are not directly loaded, while the masses of the walls of the drum are transferred rather to the spanning or supporting arches. This non-uniform distribution of the weights was no fortunate provision.

The fact that already before their loading, the piers exhibited cracks, after they were only connected by the bearing arches of the dome, is not to be denied. According to the engraving of Duperac, the arches were closed before 1565, and the dome of Michelangelo was constructed in 1588-1589. In 1547 he took charge of the building, that he supervised until his death in 1564.

On an engraving in Simil, that represents a tourney in the Vatican court garden in the year 1565, there is also drawn the buildings adjoining the court, so far as they were completed. We see from this how far the work of Michelangelo had been carried on the dome of S. Peter. The drum was then fin-

finished up to the main cornice. (Fig. 38).

In his work on the original projects for S. Peter, H. von Geymüller shows us the condition of the building in the time of 1520-1536, according to a drawing from the collection of Destailleurs in Paris (Fig. 36). Piers and arches as well as the pendentives, at least the latter in part, were completed at the time of these sketches. That it be not doubted, whether the date between 1520-1536 stated for these be correct and not faked, must be proved.

The arches are drawn with oblique coverings for protection against wind and weather, thus an indication, that the work on the building was then standing still, and that Michelangelo took charge of it in this condition in the year 1547. Then remains no doubt, that after the year of the death of Bramante (1514), whose plans were carried further, and which Michelangelo had to consider as the basal and completed facts, so far as they concerned the construction.

28. Petrucci's Model for S. Peter.

The same Serlio states, that in the time of Julius in Rome a Sienese Baldassare Petrucci also lived, not only a great painter but also an important architect, who likewise following the footsteps of Bramante, made a model for S. Peter, that exhibited a central building, that in general coincided with the plan of Bramante. (Fig. 35²⁹). Except that he omitted the loggia-like treatment near the apses, assumed four entrance doorways to the interior, and would establish the principal altar at the centre of the great dome, changed the four angle buildings into sacristies, over which four bell-towers were to rise as decorations, especially on the external facade toward the city. The diameter of the principal dome was fixed at 137.8 ft., those of the small domes at 47.5 ft. The four piers supporting the dome corresponded in size to the present arrangement. The plan is beautiful, but less clear and simple in the interior, than that of Bramante and the plan selected by Michelangelo, and it does not come into consideration further here, excepting the statements concerning the piers. The four dome piers designated by Serlio as "weak" are at this time regarded as the work of Bramante, on the ground of the drawings from the collection of Destailleur.

They must be weakened by three great semicircular niches and also by two very small ones, and by larger stairways in the interior, according to the representation on the uncertain plans of Bramante; wherewith it is not to be forgotten, that we do not have to do with high arches extending through, but with two wider arrangements of little height and over each other.

Note 29. From Burckhardt-Lübke. *Geschichte der Renaissance in Italien*. Stuttgart. 1888. Paul Neff Verlag.

Antonio da Sangallo (died 1534) must have closed and transformed them to flat recesses, as well as have reduced the stairways in the interior. Whether, how and by whom this will be proved, must be left here. Von Geymüller gives a colored representation of this procedure. (Plate 45).

The pressure areas of the four piers were thereby somewhat enlarged at certain places, but the foundations were more loaded by this.

When formerly the words were placed in Bramante's mouth, that "in his building he wished to place the Pantheon on columns", this expression would have better indicated, that he desired to place the Pantheon on four piers joined by arches.

The added masonry of Sangallo thus had at least 13 years rest (1534-1547), before Michelangelo took up the work again on the building. That such later rebuilt and added masonry had but slight effect in the desired sense is shown as a similar example by the assumed strength of the crossing piers of S. Francesco in Bologna, and also by similar procedures in the German empire.

In his design, Michelangelo uniformly distributed the load of the drum, of the dome and the lantern on the pendentives, the arches and piers, strengthened the drum by 16 buttresses, and his structure must remain in equilibrium, when he employed a uniform material -- thus only limestone ashlar or merely bricks -- and if the circular passage inside the base of the drum were omitted or were treated otherwise.

In the valley between Monte Aureo and Monte Vaticano once rose the Circus of Nero, outside the city walls, its longer axis being directed toward the Bridge Trionfale of the Tiber. On the foundations of the Eastern longer side of the Circus

once stood the Western side walls of Old S. Peter, and in the place of both were sunk the Western longer walls of New S. P. Peter.

29. *Diminution of S. Peter's*

According to the statements in the work of Fontana, the floor of the race-course of the Circus was sunk to the line M (Fig. 37 b), which was found 3.23 ft. below the horizontal level of the water. There commences the layer of piles driven 18.4 ft. deep, which piles were to consolidate the movable earth. Above it lies 24.5 ft. of filled earth, and 25.0 ft. higher is the pavement of the new Church S. Peter, thus being 72.2 ft. above the points of the piles. (Fig. 37 b). On this massive foundation rise the piers of the dome, 57.8 ft. high to the imposts of the arches of the nave with their niches and pilasters. (Fig. 37 b). According to Simil, the piers had at that time the existing form of cross section as drawn. V. Von Geymüller adds thereto the niches drawn on the sketch designs of Bramante, whose form, originality and extent may or may not be believed. They are no longer open to investigation.

Piles, foundations, piers and arches can only be works of the same time, as may be seen from the drawings of Destailleur, and technically nothing else is to be thought. Later patchings are excluded there.

In the general statements concerning Bramante's dome, it was said by Serlio, that "the existing temple was measured in antique Roman palms, and that the diameter of the drum, and also that of the dome amounted to 188 palms". In round numbers, this is 137.5 ft., while the diameter of the executed dome is actually 136.0 ft. (see Simil; *Etat actuel*. Pl. 2). The difference in the statements is thus not worth mentioning; it only confirms to us, that the account of the piers and arches made according to Destailleur agrees with Bramante's model, and has never experienced any so-called strengthening in the principal dimensions. What stands there was conceived by Bramante, was executed according to his plans, and was not enlarged at all, even later.

30. Technical Expedients of Bramante.

An "interpretation" of the somewhat doubtful drawing of Serlio was attempted in the year 1696 by A. Specchi, but can be as little satisfactory as a later one by H. von Geymüller.

The two inner pairs of columns of the eight openings have to support portions of the load of the dome, and first to receive the architrave, which they again transfer to the columns. The architraves are about 8.8 ft. long from end to end, and accordingly the load assigned to them is not small, and Bramante as well as Serlio do not describe the means by which a fracture and resulting cracks in the dome could be prevented. But also the Pantheon furnishes conclusions for this, where the niches are spanned by strong arches (Figs. 39 e, f), that do not appear in the surface of the dome, or at least not as an architectural motive. It must be assumed that the proper technical expedients were foreseen and applied by Bramante. Unwise for him are the four winding stairways arranged to ascend in the drum. They are placed close to the edges of the piers, thus being exactly at the places at which the discharging arches would require their strongest abutments. Then the circumstance would also have to be considered, that the covering of the passage would certainly be cracked, on account of the unequal loading and the irregular setting of the masonry of the dome, opposite the monolithic columns; a separation would occur at a b. (Figs. 37 a, 39 e).

63 The only rational solution of the statements and contradictions in Serlio is given by the solution drawn in Fig. 39 e, as attempted by Alfred Durand-Claye (Engineer of Bridges and Roads, Professor at the Ecole des Beaux Arts, Paris, 1879), in his "Etude sur la Stabilité de la Coupole" projected by Bramante for the Basilica of S. Peter at Rome -- made for the work of M. H. von Geymüller". It agrees with that successfully executed at the Pantheon.

64 Michelangelo has frequently been reproached, that by his mighty and irregularly acting dome, opposed to that planned by Bramante, he gave opportunity for additional works, that would have been superfluous for the latter. Bramante for his building judged that the extent of the foundations with the corresponding load on the ground, as well as the cross sections of the supporting piers for his dome, were sufficient and indeed correctly so. These required no change and no additions. Were such then necessary for the execution of Michelangelo's architectural ideas? I might deny this and confirm t

the denial by calculations, in which I assume the top of the internal main cornice over the four supporting arches as the basis for the statement. The profiles of the domes of Bramante and of Michelangelo are drawn beside each other at the same scale. (Fig. 37, a, b). The former is based on the drawing of M. Durand-Claye taken from Serlio's book.

The difference in the heights of the two dome structures, measured to the tops of the crosses, is scarcely worth mentioning. The weight of the erected dome, in which those of the lantern, the dome shells with the ribs, the drum, the buttresses and the substructure are computed and taken into account, were calculated (1748) by Poleni at 165,662,651 Roman pounds, = 60,853 tons. ³⁰

Note 30. The Roman pound in the 18 th century = 0.339066 kilo, according to Benaven, *Le Cassier Italien* (1787-1789). Also see Tacchini. *Metrologia*. Milan. 1895.

31. Weight of Bramante's Dome.

A calculation of the weight of Bramante's dome on the basis of the adjacent illustration and including a covering of lead would give 59,087 tons.

The parts 1 to 9 taken together have a volume of;

1.	221,791 cu. ft.
2.	80,328 cu. ft.
3.	158,658 cu. ft.
4.	21,402 cu. ft.
5.	71,898 cu. ft.
6.	329,628 cu. ft.
7.	46,618 cu. ft.
8.	8,547 cu. ft.
9.	7,319 cu. ft.
Total	946,189 cu. ft.

For travertine ashlar, split stone and brick masonry, assuming an average weight of 124.84 lbs. per cu. ft., a total weight of 59,049.53 tons would result, to which is also added the lead covering weighing 37.47 tons, which makes a total weight of 59,087 tons.

The difference in the weights of the two domes would then be 60,853 - 59,087 = 1,766 tons = over 3 1/2 million lbs.

M. Durand-Claye regards the loading of the ground and the

stresses in the building materials as safe, according to his calculations. Neither Bramante nor Michelangelo worked at random here, but rather with like consideration and with correct statical feeling. How far they were supported by definite rules, or what was the nature of their calculations, the masters give us no information, but certainly they did not succeed by the statical feeling alone. And if defects have appeared later, they are to be referred to faults in the execution and to unequal utilization of the building materials, (according to Rondelet, *Art de Batir*), as for example the construction of the buttresses of solid ashlar and the facing of the walls of the drum with travertine ashlar, when it is built of split stones and bricks.

Unequal settlement was the necessary result, thereby producing cracks in the not uniformly constructed walls, to which the too heavy loading of the vertex of the vault contributed, which together endangered the permanence of the structure, but did not cause it to fall. Since the laying of its corner stone 400 years have flown, and it yet stands like a mass of bronze in the valley between Monte Vaticano and Monte Aureo, in the splendor of its completed internal decoration.

Would success have been greater with the execution of Bramante's dome? I scarcely think so, and rather believe the contrary.

But the conception of the whole is, and remains the merit of Bramante, while the form and construction of the dome is that of Michelangelo.

Whether and where Bramante would have changed it during the progress of the erection must remain undecided, that changes would have occurred appears to me certain, since his last word cannot have been what he gave in the drawings, and every architect engaged in practice will agree with me in this. Every creator has experienced it at all times in his own life, if he takes the problem earnestly, that what is given at the first start is also not the last word on the subject.

87 Figs. 39 a, b, c, d, e and f give a comparative grouping of the three greatest vaulted stone structures, that have been erected since the Birth of Christ until the present time, with the addition of certain structural details. The ancient

imperial Rome, for which I assume for the stepped structure of the Tomb of Hadrian a supporting structure in vaulted form, should not be inferior to later generations in its works.

(Note to Fig. 42. Perspective section through the domical vault of S. Peter in Rome, sketching the mode of vaulting and of anchoring).

(Note to Fig. 43. Represented according to the measurements of the great wooden model of Michelangelo. The innermost of the three shells of the dome was suppressed in the execution, and the statues on the buttresses of the drum were omitted).

88
89 Figs. 40 and 41 show vertical and diagonal sections through the dome over the crossing, giving the thickness of the piers, and the method of the different vaultings, supporting and discharging arches, the separations in the masonry, in brief all that is advisable and necessary for the technician for determining the statical conditions and occurrences on the building. The structural skeleton must be for it of perhaps higher value, than the decoration of the internal elevation.

Fig. 43 represents a drawing of the great wooden model of Michelangelo, where a dome of three shells was intended. In the execution the inner hemispherical shell was suppressed. The figures on the buttresses were not executed.

Fig. 44 gives the geometrical drawing of the dome and a photographic view of the same for comparison, in order to show how both representations agree with each other.

To have laid the corner stone for the highest ecclesiastical architectural work of all times is the merit of Bramante, often contested and no longer to be disputed, that no man may again withhold from him.

Thereby he remains the greatest in the profession!
Gleanings.

32. Criticism of the architectural Activity of Bramante.

The contradictions, which prevail in regard to the architectural activity of Bramante, or his participation in the well known architectural works in Lombardy, induced me to make later partial examinations during the last autumn and in January, 1912, at the localities of the more important places.

These extended to the Cathedrals in Lugano and Como, to the buildings in Milan, Crema, Abbiategrasso, Vigevano, Saronno,

Chiaravalle, Pavia etc. I cannot give everything here, but I may emphasize some essential things. My observations rather relate to the artistic-technical domains. The documents have been pretty exhaustively treated by H. Strack and Gotthold Meyer, but particularly by Malaguzzi Valeri. By the last named, I especially emphasize the pertinent works in the parts of "Italia Artistica" (Milan, I and II), as also in the "Collezione di Monografie illustrate -- Pittori-- Sculturi -- Architetti. G. A. Amadeo, sculptor-architect"; Bergamo, 1904, which are distinguished by good illustrations, clear and conclusive text.

33. S. Maria delle Grazie.

I commence with S. Maria delle Grazie in Milan, since as a greater work, judgments on this building differ so greatly.

Must the portal of the main entrance facade be by Bramante? The details and the technical execution do not just prove it, nor does the composition in general.

The shafts of the columns are cylindrical, without entasis and diminution, the fillets with coves at the transition to the bases and the capitals are wanting on the shaft drums, an offence against antique practice and the custom of Bramante. The rings on the shafts of the columns are capriciously treated, based on nothing, and are Lombard appendages, as well as the circularly cut plinths of the bases and the profiles of the bases themselves. For excuse it is readily stated, that these are archaic relapses of the master, who went into that of Laurana. The entire ornamental portion is a dry work, and more permeated by the spirit of a Lombard master, who would purify himself from the dross of his original art, as from that of an innovator in Renaissance art, who came from abroad as a prophet. Likewise the heavy semicircular tympanum over the main cornice with its coffered soffit is nowise in harmony with the choir walls and apses. On the contrary how different in form and technique are the columns of the cloister court built there in 1497; antique practices throughout, column shafts with diminution and entasis, apophyges, antique bases, simple bell capitals like Corinthian' and this from the same master and almost at the same time? That is scarcely to be accepted, the "manner" of the architect indeed did

not change so much on the same structure in such a brief interval. (See Fig. 29 and Section on Columnar Orders).

The small medallions in the frieze, those already made by Amadeo in the old sacristy of the Certosa near Pavia, and those on the cathedral at Lugano (1517, according to the date on the architrave), but much more skilful, reappear on Lombard additions, but are not inventions of Bramante. The motive with the deep semicircular tympanum is possessed by the Tuscans, Bolognese and Venetians (portico of S. Marco in Rome) B Badia near Fiesole, portal on the island of Ellena, tombs in Venice, and particularly on the main entrance doorway of the School of S. Marco (1485, by Martino Lombardo)), yet already much more finely conceived and executed.

Now the choir structure; if other works did not precede, then it might be allowed to pass for an innovation on Lombard soil. But the contrary is expressed by Chapel Portinari of the Florentine Michelozzo, a substructure strengthened at the four angles, over the square plan being a circular drum and a dome on pendentives with side and vertex lights. Two side walls are opened by arches, next the rectangular choir and next the preceding transverse portico: the two others are closed below and opened above by large double windows. The drum is circular internally and 16-sided externally, the span of the vault amounting to 31.2 ft. We see the same architectural idea, but embodied at double size at S. Maria delle Grazie, though with the further difference, that there on the rectangular choir structure is also a semicircular exedra, and with the external walls closed below, the upper openings extend to the ground and likewise project as semicircular niches. The greater span of the dome is compelled by the existing Gothic church with three aisles, (counting without the chapels), that should at first remain, and had to be brought into connection with the new choir building. (Fig. 29).

The architectural basis for both structures is thus approximately the same, but not original for Bramante. With his choir building he stands on the shoulders of his predecessor in Milan -- Michelozzo -- but with the difference, if Bramante be really the author, that the interior may have a much greater effect by the size, but the same interior has lost

the solemn consecration and the beautifully arranged detail forms. (See the two sections in Fig. 29).

92 The building of Michelozzo also exhibits on the exterior a
93 finely graduated development of its parts, a happy dying away
of its masses upwards, which cannot be said of S. Maria delle
Grazie. The grouping of the elevation is extraordinarily clear
in the first case, confused in the other to ugliness. (Fig. 46). At S. Maria delle Grazie, the high extension of the square choir structure has not contributed to beautify the view of the choir. In spite of the lower apses and of the externally 16-sided drum borrowed from Michelozzo, it is treated as unluckily as possible, but is still more unfortunately handled in the details, by the animation of the wall surfaces by vertical sham supports like candelabras. (Fig. 32). It was a merit of Bramante with this purely Lombard ornamental trumpery, which furthermore is to be regarded as not a result of Gothic motives, but rather as an illogical revival of elements of antique minor arts. Likewise the ornamental pilaster panels with foliage and little figures, or again with candelabras, are nothing else. (See Palace Comunale in Cremona etc.

Of the buildings with free supports or half columns like candelabras, as on Palace Stanga at Cremona, the Cathedral in Como, the House Casa Modignani at Lodi (See Paravicini), I may not ascribe them to Bramante, he would by compromise obtain part of his fame by having influenced the Lombard Renaissance toward purity. The saying, that he went to school under Laurana, and there adopted something of the latter's style, is approximately overthrown.

The question of the subdivision of the drum was rightly suggested by Michelozzo, and after him by the architect of S. Maria della Croce near Crema (Fig. 46), and indeed most beautifully in the good Lombard manner by the master of the Church S. Maria in Saronno. (Fig. 46).

Unsound and unintelligible is it at S. Maria delle Grazie with the gabled windows between the pilasters, still more by the relief balustrades of terra cotta above these, and finally by the windows placed beside each other in pairs, enclosed by columns with archivolts of stones of different colors. I

here blame the master least, for finally for this latter ornament he had a model on the capanile at Ferrara. (Fig. 47). An absurd placing above each other of courses of most diverse elements, such as the half story with gabled windows between pilasters, above these being the relief balustrade mentioned, over this being a parapet with closed rectangular panels, on which are set the pairs of columns between the windows, separated from each other by 16 angle pilasters, these are not easily found again, and scarcely in earnest can be attributed to the genius of Bramante. Sound at the termination is only the stepping of the roof surfaces by the little continuous break with light openings and the added lantern. (Fig. 46). Singularly treated is also the transition from the square substructure to the polygonal structure of the drum and the semicircular apses. Here indeed the Florentine Cathedral cast its shadow, but the object casting the shadow was better.

Michelozzo solved the question better at Chapel Portinari, and even the architect of the addition to S. Croce near Crema was more fortunate. The stepping of the roof further occurs entirely in like manner also at the Pilgrimage Church in Saronno. (Fig. 46). Beautiful and refined in profile is only the basal story of the choir structure, and of the apses up to the beginning of the flat rectangular niches. For the whole, I may again appeal to the Judgment of the Frenchman F. Monmory (Cesar Daly, 1837), based on Paravicini:-- "the entirety of this structure exhibits such an indecision in style, an ornamentation so labored and even so irrational in some parts, that it appears as if these works were directed without unity of architectural and decorative design by different architects succeeding each other." The architectural idea, the only good one on the building, is not new and does not belong to Bramante; what is new is so unfortunate, that it cannot be attributed to Bramante.

34. S. Satiro in Milan.

The sacristy of S. Satiro in Milan is a small and lofty domed structure, only the size of a living room in plan, above this being only a reconstruction, its internal effect being in direct opposition to that of S. Maria delle Grazie. Rising in narrow form, still more restricted by strongly projecting

horizontal cornices, it almost has the effect of a tower, and the observer must allow for certain dislocations of the members, if he wishes to enjoy the details, the beautiful ornaments in stucco and terra cotta. The interior has too rich an effect, is not simple, but still shows strong and good architecture. The Lombard candelabra supports, preferred elsewhere, are replaced at the double windows by flat pilasters with consoles projecting from them, as a novel gift of the builder. (See the interesting illustration in the Section on Central Church Buildings). The ornaments mentioned are now in part coated with white limewash, partly "bronzed" -- in not quite a very artistic manner. The little structure is to me in its internal treatment credible for Bramante as author.

35. S. Maria near S. Celso in Milan.

The atrium of S. Maria near S. Celso in Milan was likewise formerly attributed to Bramante. The beauty of the proportions and the refined different members also speak for this, but not the quality of the execution, that is here perfected, while elsewhere the buildings of Bramante suffer from the contrary.

At this time Dolcebuono passes as the builder; for the architect of the main facade of the church is mentioned Galeazzo Alessi. (See *Le Fabbriche piu cospicue di Milano*. Milan. 1840). New inscribed tablets on the building assume:-- "work of Dolcebuono --. Galeazzo Alessi of Perugia erected the facade of this famous temple, dedicated to the elevated Virgin".

The street and court facades are free from all Lombard influence, and throughout are in a good -- strongly antique style, both in arrangement as well as in details. (Fig. 30, plan and elevation). Likewise the jointing is antique, the fillets with the apophyges being wrought on the shaft. The bands of the architrave are not inclined as on buildings of the late Roman time, but which was also adopted by the masters of the Italian Renaissance, for example, thus on the portal of the Cathedral in Lugano, on which is cut the date 1517; also on the buildings of Falconetto and others is found this treatment of details. The pilasters on the external facade are diminished like the half columns in the forecourt.

The street facades are of finely grained white limestone,

those of the court showing in combination with this in the arch spandrels Verde Antique and red Veronese marbles. The Corinthian capitals of the half columns are of bronze, the projections of the inner piers on the contrary are of dark red bricks, as well as the rear walls of the facades and cross vaults in perfect execution. The Corinthian capitals are for the author of the said "Fabbriche di Milano" evidence, that Bramante did not erect the building. He misses here the varied treatment expressed in the capitals, for example as in the court of the Canonica near S. Ambrogio. This was not exactly a particular characteristic for the works of Bramante, if he were a pupil of Laurana, who still in the showy courts of the Palaces of Urbino and Gubbio, only worked after purely antique Corinthian, or better said, Composite capitals of old Roman origin. Just as little characteristic for Bramante is the division of the capitals in two parts by a decorated necking, even if he also sometimes executed such. For with and before him his colleague did this, for example, Amadeo in Chapel Colleoni at Bergamo (1475), in the Certosa near Pavia, (great lavatory, pier capitals in the chapels). On the loggia at Brescia, as on House Bolognini (beginning of the 16th century) is likewise found the decorated necking. On the columns of the Canonica of S. Ambrogio and in the court of S. M. Maria delle Grazie, they are wanting, on the contrary, and yet these are purely Bramantesque, as also those on the portico in Saronno.

The judgment of F. Cassina in the work mentioned on Milanese buildings, on the building materials and the mode of execution of the brick masonry and the vaults, I subscribe to with pleasure. "The capitals on the street are of stone most finely wrought, and the others of the court are of bronze, executed with the greatest perfection. This vestibule is admirable for its most beautiful proportions and also for the archivolts, unique by the ingenious combination of stones and by the cornice made with panels, all of terra cotta". The bricks measure $10.24 \times 6.30 \times 3.35$ ins. The mortar joints are scarcely 0.8 in. thick. Headers and stretchers alternate, not all end joints are accurately vertical; the surfaces of the stones are rubbed, and the joints are partly raked out.

The vaults are without keystones, the ribs are diagonal and extend along the voussoirs.(Fig. 30). Here at least an architect with refined feeling and a trained technician represents the name of Bramante.

It is also interesting to see, how Dolcebuono erred in the intersection of the impost cornice with the shafts of the columns. Shafts of columns and pilasters are diminished.(Fig. 30).

36. Loggia in Vigevano.

The loggia of seven arches in the court of the Castle at V. Vigevano is attributed to Bramante by Müntz and by H. von Geymüller. The impression made by the loggia in general permits one to decide for Bramante. The proportions are extremely dignified, and the details of the columns and arches are refined. The shafts of the columns are of granite, the capitals and bases of white marble, now colored dark as bronze, the archivolts have small flat keystones as at S. Ambrogio in Milan, and the arches are not moulded in the antique manner, but are simply inclined with coffered soffits. The capitals show the form of those, with which we have become acquainted in S. Ambrogio, in the court of S. Maria delle Grazie in Saronno etc. In Müntz is printed a bad representation of the loggia.

Also for the Church S. Satiro in Milan, according to the details, we must indeed adhere to Bramante as master, and likewise for the arched portico with elevated passage toward S. Ambrogio. There are first surprising the antique entablatures -- architrave, frieze and cornice -- between the capitals and at the imposts of the arches, as well as the extremely small keystones at the crowns of the arches. The proportions are extraordinarily fortunate and beautiful, and particularly well is the stilted passageway arch brought into harmony with the adjacent portico arches.(See the illustration in the Section on Palace Buildings). The columns have entasis and diminution, Attic bases, and the usual bell capitals with diagonal volutes and acanthus leaves.

The existing plan of the first mentioned Church S. Satiro, in spite of its incompleteness, shows that Chapel Portinari in its principal motive -- the domed area -- was the starting point for the form of the building. Four cross vaults should

open into it. Three exist but not the fourth, the choir arm. The construction in this direction was made impossible by local conditions. A flat recess and a projecting enclosure must furnish space for placing the high altar. Bramante treated the niche after a motive often tried for sculptures and architecture and for entrance portals of churches, with inclined soffits and jambs, thus with a slight recession of the closing wall (Cathedral in Como, Gate alla Sagustea Vecchia and Lavatory dei Monachi in the Certosa near Pavia, on Palace Comunale in Cremona etc.), wherein it was not desired to produce optical illusions in the observer in the modern sense (theatrical effects), by means that served the bare reality, and destroyed every illusion, as soon as the height of a man in the room was to be considered. The clergy at the high altar placed the matter correctly before the assembled congregation, and a skilled eye will at once and unpleasantly be surprised by the break in the springing line at a (Fig. 48), that appears the more strongly, the nearer one comes to the deep flat recess with the strongly inclined impost. In spite of all surprise, this arrangement remains practical, at first being a childish experiment and a self-deception.

Nothing can be said of an "excellent relief in perspective" producing such a perfect effect behind the high altar in the choir of S. Satiro.

"Wonder of children and apes,

When their palates stop". (Faust, I, 1).

Bramante certainly did not desire to produce this.

For the portico of Church S. Maria at Abbiategrasso, that Strack's statements have in general remained influential for me, with the exception of the Bramante hymn in his magnificent work on the central buildings of Lombardy. (Page 22).

The portico has become an extended bay of the middle aisle of the old church, of exactly the same width and height, but without any proportion to the adjoining arched porticoes of the forecourt. What was so beautifully successful at the Canonica in Milan (Fig. 31) in finding a beautiful proportion for both parts of the building, has here not favored the architect. How well is this done, for example, on the portico of the Church on the marketplace of Udine (see Section on Public

Squares), and on the portico of the Cathedral of S. Maria in Civitacastellana. (According to an inscription erected about 1210; see illustration in Section on Church Buildings).

78 The projecting structure in its main lines, as shown, was already solved at the Triumphal Arch of Alfonso in Naples and at S. Andrea in Mantua, and this is no precursor, but is rather an appreciation by Bramante, if he was actually the master, which is not yet proved.

Concerning the contested date on the lower transverse arch, the Italian Pagave must indeed be correct with 1497. "In Upper Italy 7 is proved similar to our 7 by a medal of Este with 1472 and by another of Sforza with 1470. And 9 is like our 9 by a medal of John Jacob Trivulzio, Margrave of Vigevano in 1499. Accordingly 1497 is to be assumed without hesitation. 31

Note 31. This explanatory note I owe to my friend Privy Councillor Dr. W. Brombach, Director of the Karlsruhe Grand Ducal Cabinet of Coins.

Therefore it is indeed necessary to silence the song of praise of the great new motive, usually designated as a precursor of the exedra in the Vatican gardens. For the upper structure with the round windows, balustrade, roof, and the lantern, of the Church dell'Incoronata at Lodi,.

Amadeo is assumed as master by F. Malaguzzi Valeri in Vol. 1 of the Collezione di Monografia illustrata (Bergamo, 1904, p. 273-280 etc.), as he was called there in the year 1513, "to decorate the upper part of the church; thus the part already there he crowned by the balustrade and covered". Further in another place.

"Thou shalt not take the name of God in vain", was preached to us in childhood; the saying may be interpreted anew in Upper Italy for Bramante.

"Let not folk yet be too secure in judgment as
Who should count the ears upon the field ere
They be ripe;

For I have seen first all the winter through the
Thorn display itself hard and forbidding and
Then upon its summit bear the rose;

And I have seen ere now a ship fare straight and
swift over the sea through her entire course, and
perish at the last, entering the harbor mouth".

Dante. *Divine Comedy*, XIII, 127-138.

Section III. Building Materials and Technical Methods.

"One seeks to win from the style first its earnestness, and then only its sportive gracefulness. Ordinary building stone expresses with peculiar strength; a definite impression of richness is imparted to marble, a distinct one to bronze, a different one to wood, and a varied one to stucco".

Burckhardt.

To the saying I might give a slight extension; "ordinary building stone" may be a natural or an artificial product, consisting of limestone or sandstone, of granite or tufa; the artificial being dried or burned bricks. On this will depend its treatment and the mode of use.

Further the works of Rondelet (*L'Art de Batir*) may be considered thoroughly.

"In architecture are many things, which one only learns by experience. The proper mathematical principles indeed teach one stability, pressure, and the stability of the parts of a structure according to their weight and form. But by them alone one cannot determine the magnitude of the stability, pressure, and capacity of resistance, on which the durability of the entirety of these parts is based, since the location of these parts, their construction, and the ground on which they are erected, must be considered".

37. Prefatory Notice.

In order to obtain at once a judgment of the nature of the purely technical productions of the Renaissance, independent from the side of form, we must not forget, that we have to do with a derived and not with an early phase of the art, which in Europe already 2000 years earlier preceded as a highly developed movement of culture and art. Grecian, Etruscan, Roman, Early Christian-Byzantine, Romanesque and Gothic Architecture had already completed their tasks, before the Renaissance in Italy commenced to stammer its first words. We must observe and consider what and under what conditions the predecessors wrought, and accordingly measure and estimate the works of the new art, examine what is new, independent and original, or what was derived from the ancients, whether new acquisitions, relapses or unnoticed adherence to the old are to be characterized.

Only thus will we be justified in praise or blame, only thus shall we also be able to derive benefit from our own creations from the matters presented, and create the basis for the further development of a style, that has now dominated all countries of the civilized world, and has not yet spoken its last word, as the great monumental buildings of all the principal cities of Europe, America and Australia sufficiently testify. Great aptitude has given us in the lands of German speech a Leo von Klenze, a Gottfried Semper, a Neureuther, a Hasenauer and many others, whose works in the style of the Renaissance will yet long radiate light, heat and life, even if men must also believe in the time of 1790-1830, as once did Leon Battista Alberti, that nature had grown old and tired, and could bring forth no more great architects!

38. Building Stones.

And now is the first question:-- what building materials did the ancients employ? They used natural and artificial stones, granite, porphyry, marble of varied and of uniform colors, ordinary limestone, volcanic stones (tufa and peperine), sandstone in the forms of ashlar and of split stones, of mighty monoliths and small blocks, clay bricks burned and unburnt, and also glazed terra cotta.

Florence, Rome and the cities of Upper Italy employed at the climax of the Renaissance for their mightiest buildings the materials native to their region -- as already stated; natural and artificial stone.

Florence chiefly makes use of the fine-grained Molasse (tertiary) sandstone of varied quality, quarried in the vicinity. The so-called Macigno has proved most durable, that furnished the material for both the great rusticated palaces and the finest sculptures, played a part in the construction of the dome of the Florentine Cathedral, for columns, piers, bases, doorway and window enclosures, belts, cornices, and then was used as split stone in masonry or as ashlar facings of brick walls. (For example, the free supports in courts of palaces, columns in the most diverse churches, in the Uffizi, etc.

Milan, Verona and Genoa obtained their materials from the Alps as dense limestone or granite of the most varied colors, Venice was particularly addicted to brick construction, that

in its richer buildings was covered by marble slabs of the most diverse kinds, when the surfaces of the brick walls were built banded for a better fastening of the facing material.

But in Milan and even more in the cities of Crema, Cremona, Pavia, Piacenza and Bologna, blossomed the unconcealed brick architecture, particularly developed from the peculiarity of the material.

Rome employed in the Renaissance period the kinds of stone used there from antiquity, which are:--

1. Travertine (Lapis Tiburtinus), freshwater limestone glittering in yellow, of fine grain and quarried in great blocks, easily split while damp, but hardening in the air. It is porous in structure, yet resists compression better than marble, opposes the effects of weather, but fails in fire. In antiquity the Theatre of Marcellus and the Colosseum were built of this material; in the Renaissance period most churches and palaces were constructed of this stone, for example, S. Peter and S. Maria Maggiore in Rome.

2. Peperine (peperino) is less hard, not as beautiful, more porous and less homogenous than travertine. It is of a gray color with brown spots and shining points, a volcanic structure, a sort of tufa, that endures fire and becomes hard in the air. The ancients named it Lapis gabrinus; it is quarried in the vicinity of Rome.

3. A kind of peperine is also the stone of Marino, of compact and uniform grain, that was much used for steps.

4. A brownish-red tufa, sometimes yellowish with orange colored spots, was quarried on the hill of the Capitol, near Bridge Nomentano, and in the interior of the city of Rome. Of it were built the Servian Wall, the Cloaca Maxima (Great Sewer) and Palace Braschi.

5. A limestone-tufa, well suited for burning into lime is the Palombino, that was quarried near Palestrina and Tivoli.

- 101 6. A valuable structural material for vaulting, on account of its extraordinary lightness, is the porous stone (pumice stone), quarried North of Rome.

7. Red and gray granite, red and green porphyry, Numidian marble, yellow marble, cipoline and breccia were desired in all ages and in common use today. For more than 2000 years

have they endured the storms of time, as well as also the balsalts, which furnished the best material for pavements.

8. On the grandest and most beautiful buildings in Rome, in spite of the abundance of natural stones, were also employed bricks, the burned clay products, that like granite has withstood the rigors of time and of weathering. The interior of S. Peter, the facades of Palaces Sacchetti, Mattei, Farnese, the Vatican, the Lateran, the Churches S. Maria dell' Anima, S. Anastasio de' Greci etc., are built thereof. Most of these structures were intended to be covered with stucco, wherefore they were not constructed with the very greatest care. Bricks here came into use chiefly in combination with travertine and peperine. Bricks were made of white and red clays.

There are distinguished:--

- a. Ordinary bricks (mattoni). (11.0 × 5.46 × 1.5 ins.).
- b. Large bricks. (13.2 × 6.56 × 1.8 ins.).
- c. Large square bricks. (9.25 × 9.25 × 1.8 ins.).
- d. Thin square bricks. (9.25 × 9.25 × 1.3 ins.).
- e. Rectangular bricks. (10.2 × 4.0 × 1.6 ins.).

Just as great a part was played by terra cotta as a covering material from the earliest times, not only on ancient and modern Rome, but in all Italy and all adjacent lands on both sides of the Alps.

The approved antique tile roof, the flat and hollow tiles, remained in use, both on vaults as well as on the wooden framework of slight inclination. The proportions of the dimensions of tiles remain approximately the same as in the ancient time. (Fig. 49). In and near Rome was obtained a white and a red clay of excellent quality, equally well adapted for bricks and for roofing tiles.

9. What ensured to structures of burned bricks an almost eternal existence was the use of the excellent mortar employed. In Rome is excellent lime and pozzulano, which makes this possible, when the careful preparation and mixture are not neglected. Instead of sand occurs in the Campagna a volcanic reddish-brown earth. The entire secret of the durability and strength of the Roman mortar lies in the good preparation and the nature of the materials for mortar.

102 (10) Of particular durability is also the Roman stucco, both on

unprotected facades as well as in the interiors of buildings. Composed of lime, pozzulano and brickdust, it was applied in three coats. In the internal architecture marble dust was mostly added to this mixture. With the last coat of stucco was mixed the color, that was intended for the surfaces. These were dead polished as a rule. The stuccos in the courts of Palace Spada, of the vestibule of Palace Farnese and that of Palace Massimo in Rome prove their durability. A great part was also played in the internal decoration of churches and palaces by gypsum, also much employed in antiquity, which was obtained from the island of Cyprus, from Aetolia, and then from Calabria in the country itself.

11. As a binding material, asphalt was in use at different times, also ordinary and hydraulic mortars (of lime, sand and pozzulana), iron and wood.

39. Building Woods.

For beams, roof construction, work of internal construction, were employed hard and soft woods, the different kinds of oaks, beech, poplar, alder, elm, ash, cedar, juniper, cypress, pine, larch, fir, willow, linden, walnut, olive etc. on both sides of the Alps; sycamore and chestnut occur earlier in Italy than with us (Germany).

40. Metals and other Building Materials.

Of metals, there came into use; in Northern and Southern Europe lead, iron, copper, tin, bronze, gold and silver. For internal and external decorations the most varied colors, and for the former also fabrics, leather, ivory, mother of pearl, precious stones of all kinds, large white glass panes, small cast glass of all colors, as well as various kinds of enamels.

The Renaissance masters do not speak of others. Indeed they made serviceable also for decorative purposes one or another sort of their wood or stone; but they added nothing further to the principal structural materials. They remained exempt from substitutes, with which our age abounds, thanks to the progress of science.

Of the kinds of roof coverings were traditional those of reeds, wood, straw, unburnt bricks, with stone slabs, burned bricks, tiles, clay slates, and metal (lead, copper and bronze).

The roof of stone slabs (Cathedral in Sebenico), tile roof

(Florentine Cathedral; dome of Church Umilta in Pistoja, almost all palaces of Tuscany), and the protecting roof of sheet metal on a covering of stone or wood (S. Peter in Rome, churches and palaces of Venice) remains in use in the Renaissance. The slate roof found its way over the Alps only to their feet; the Genoese roof of slate slabs has nothing common with this.

Of metals for structural purposes in the Renaissance, iron was employed to a greater extent, but more as a staying or aiding material for structures of wood and of stone; it did not play an independent part in the sense of modern architectural construction.

The use of bronze for great structures (roof trusses) was not foreign to antiquity, evidence for which could be deduced a few centuries since from the bronze trusses of the portico roof of the Pantheon in Rome. An ecclesiastical prince and owner in the Renaissance and his subordinates destroyed them, transformed and used them for structural and military purposes. "What barbarians did not do, that did the Barberini", was said of this act by the keen-witted Pasquino.

The attempt was not made to further develop and utilize for structural purposes the metal construction of the antique art and practice, so strongly venerated by them, which certainly found extensive employment in the imperial period (on basilicas and forums?).

Use was made of all the building materials mentioned and their modes of use by the Renaissance in Italy, though not of the latter, and here arises the reproach for them, that they contributed nothing to the enrichment of the domain of metal construction for structures and foundations, as also the intervening art period could not do. Only the direct resistance of the thrust in vaults by visible iron tie-rods remains the doubtful merit of mediaeval and Renaissance architecture.

41. Iron as Structural material.

The role of iron as an aiding material for great structures of wood may be considered here only on account of the connection; it occurs in like manner through all ages and also was the same in the Renaissance. More important for us is its cooperation in the monumental covering of interiors of wide spans, and also for small vaulted rooms, where strong enclos-

enclosing walls or corresponding buttresses could not be afforded.

Antique art avoided everything in construction, that might give opportunity for a consideration of its stability or challenged this, and therefore its ground plans were so arranged, that the necessary abutments for the vaults disappeared in the lines of the walls, and they appeared; first in the buildings of the late period, but only in a timid way. (Minerva Medica in Rome). Also a direct resistance of the thrust of vaults by the insertion of ties of wood or iron was avoided, particularly of those visible or concealed. (Fig. 50 a, b).

The Byzantine and Arab architects on the contrary made no concealment of these, as shown by the iron ties in S. Sophia at Constantinople and by Fig. 51 c, taken from an Arab mosque in Cairo, where a complete wooden framework of continuous wooden ties is inserted between the capitals and the imposts. More details of this can be seen in the work mentioned below.³²

Note 32. Choisy, A. *L'Art de Bâtir chez les Byzantins*. Paris. 1883. p. 117, 132; Pl. 25.

These were followed by the masters of Romanesque and Gothic architecture, who even made the ties objects of colored decoration, as shown by the Church of Schwarzach in Baden,³³ Ss. Giovanni e Paolo in Venice, Church dei Frari there, and S. Anastasia in Verona (Fig. 51 a, b) and various others.

Note 33. See Durm, J. *Die Abteikirche Schwarzach in Baden*. Deutsch Bauw. 1899. p. 453.

104 In great structures, so far as such in general may be mentioned here, the middle ages adhered to its iron ties, when the iron rods were often ensured against deflection by suspension on iron wires. These necessary evils were not exactly ornamental; in the Venetian churches they are confusing by their doubled arrangement at the height of the imposts of the side and middle aisles, disturbing the effect of the interior, and always remain indications of doubt of the ability of the constructors.

This procedure with sole employment of iron was also followed by the masters of the Renaissance without hesitation. Scarcely one of the vaulted arched porticos in the cloister courts, with one side resting on their stone columns, is built

without these doubtful additions of iron tie-rods, and they also reappear in the great porticos and the churches, for example on the Mercato Nuovo, on the great portico of Hospital Innocenti, in the palace courts of Florence, Milan, Bologna and Genoa, in the cloister courts of S. Lorenzo, of the Certosas near Florence and Pavia, near Pisa and Bologna, as well as the churches of S. Siro in Genoa, S. Maria Nuova in Cortona, S. Maria delle Grazie in Pistoja and a hundred others, of which moreover it is to be said, that the Early Renaissance sought in its churches to keep itself free from this structural addition. (For example, S. Lorenzo and S. Spirito in Florence).

In connecting iron bars to anchors, hooks and bolts were used, and doubled bolts for later driving wedges in certain other connections, (Figs. 51 d, e, f, g), exactly as in the preceding period, which used iron screws just as little. Here is also therefore no advance to be indicated, and only the furniture industry could use such, for this first brought wooden screws into use. With these should not be confused the "wooden screws", that the ancients already employed in presses for oil, wine and other materials. 34

Note 34. In the "Comptes de la Chambre de Louis XI" (1478) were mentioned 15 screws and 4 "mornes" of iron. A general use of the screw is first indicated in the 16th and 17th centuries. -- In the "Inventory of Mazarin" (1653) is contained a bed; "The wood of a couch complete with the screws to set it up". -- In the Bargello at Florence is a bell with the date 1384, that still has iron double bolts for fastening the hook of the clapper; on the contrary another with the date 1440 has iron screw bolts with nuts.

Section IV. Masonry of Natural Stones; Scaffolding and Arrangements for Hoisting.

42. Stone Masonry.

"The organic law, that acts in masonry, is fixed by an artistic realization of what structural needs and local conditions prescribe, by the appearance corresponding to the feeling for beauty. The force of gravity and the resistance of the material thereto are the nearest and most prominent of the forces here effective; it is clear, that these latter increase in activity, the more the load increases, and thus from above downwards. The stepped reduction of the massiveness of the structural elements from below upwards, which everywhere appears in the artistic structures best executed in ashlar style, therefore corresponds both to the law of beauty and to that of force. To this is added another law, that of similarity of elements, which applies equally and similarly. Thus with a graduated use of dimensions in courses, each course must consist of similar elements, so far as possible. -- But as being vertical, the wall is moreover subject to the general law of proportional development, in so far as it consists of three parts, the base, body and crown (plinth, wall and cornice). In every style, whether called Egyptian, Grecian, Roman, Gothic or otherwise, there applies the absolute and correct rule, that substructure and crowning portion for buildings in several stories must first base their proportions on the entirety, as if the entire building were merely divided into three parts, consisting of 1, the substructure, 2, the crowning part corresponding to this and the whole, and 3, the portion lying between them, supported by the former and crowned by the latter. But moreover, the harmony of the smaller units (the stories and their subdivisions) is to be arranged with each other, and with that main division into three parts."

Semper, G. *Der Stil* etc. Munich & Frankfurt. 1863. pages 363, 383, 388.

43. Egyptians, Germans and Romans.

The Egyptians built their walls entirely solid with ashlar; filled walls with stone facings were refused by the people building for eternity. Likewise the Greeks followed this principle in general, but they proceeded more economically, when

they renounced contact and careful dressing of the ashlar in the interiors of walls, producing a hollow construction in a certain sense, attaining a high degree of stability by a proper bonding in courses, combined with the most careful dressing of beds and end joints with the connection of the separate stones in height, width and depth by iron dowells set in cast lead and Z, I or dovetail cramps, with the use of through headers (diatonoi). These ashlar were set dry with the finest joints, and no people of the earth and of no period to this day has excelled the Grecian works in beauty and goodness of execution; on the contrary, all else is vain bungler's work! Etruscans and Romans frequently sought in this direction to keep equal pace with their predecessors, and also sometimes succeeded.

Although by them likewise, and again particularly in the late time was employed massive ashlar construction with extremely great dimensions of the stones (Baalbec, certain parts of the amphitheatres in Verona, Nimes, Arles, Fola and Rome), the works of the Roman constructors of the imperial period mostly exhibit the greatest economy in the use of dressed stones, when they gave preference to masonry filled with stone spalls and mortar, faced with bricks, ashlar or stone slabs (emplecton, opus reticulatum, opus incertum), a method of construction already condemned by Vitruvius, when he referred to the spalling by unequal setting of the different parts and to the possible fall of the structure, which might occur, if the filling masonry were not arranged in correct proportion to the facing, and with thick concrete or filled work and thin facing, both parts were executed at the same time. (Compare in this respect the spalling on the walls of the tombs of the Mamelukes and of the Caliphs near Cairo with those of a great number of fortification walls faced with bricks in Italian cities).

44. Middle Ages.

Thus the Italian and German middle ages, in contrast to the French with small stones, built with poor ashlar work on the exterior and small stone spalls in the interior. "Depopulation, poverty and the ruin of roads and waterways, loss of ancient traditions in building and of the mechanical arts, led

The early middle ages to the use of their materials with which
 line joints, which is again an important key to the understand-
 ing of medieval construction, as it also indicates the
 "manner."

Another common feature in all earlier work of the period is
 mentioned as the principle of pyramidal construction, employed
 for the actual increase of the stability of the walls or for
 purely optical reasons. Egyptians, Greeks, Romans and the
 architects of the middle ages make use of this, and those of
 the Renaissance did not exclude it. But in the Renaissance

they expressed the principle.

And yet another, that already occurs early (for example in
 the pedestal of Apollo near the Propylaea in Athens), which
 is of pyramidal construction (with towers of unequal heights),
 that in the early middle ages in Byzantine was a favorite mo-
 tive for the decoration of similar work, and that extended far
 came thence from East to West (Venice, Massima, Florence, P.
 and, in the Renaissance, the same principle was applied to the
 dome of St. Peter's, and which was likewise adopted by the Renais-
 sance.

45. The Renaissance of the Renaissance.

That the latter middle ages first built and then decorated
 in contrast to the French, was likewise done by the Renaissance.
 (See many monumental churches and public buildings, for
 example the Hall and the Cathedral in Florence before
 their reconstruction, and Fig. 88.). Most churches in Florence
 and Siena, as well as many other cities, and so many churches
 appear externally as massive similar structures, with the ex-
 cept of their walls consisting of solid stones or blocks, and the
 windows only form the "covering" or overlying work. Thus the
 pillars given and domes in Florence were analogous analogs,
 marking by their great magnitude, and also the Renaissance
 in Rome with the large sections of overlying stone and in-
 scribed within enclosures of walls marked.

The Renaissance Palace in Florence, built in 15-
 16th and 17th centuries (Figs. 84, 85, 86, 87) is a masterpiece
 of the Renaissance in construction. Research for the
 Renaissance style, which is the basis of the Renaissance style,

the early middle ages to the use of thin ashlar with thick lime joints, which is again an important key to the understanding of mediaeval construction, as it also indicates the times".

Another common impulse in all ashlar work of the peoples mentioned is the principle of pyramidal diminution, employed for the actual increase of the stability of the walls or for purely optical reasons. Egyptians, Greeks, Romans and the architects of the middle ages made use of this, and those of the Renaissance did not exclude it. But in its graduation they surpassed the ancients.

And yet another, that already occurs early (for example on the pedestal of Agrippa near the Propyleion in Athens), which is of pseudisodomic masonry (with courses of unequal heights), that in the early middle ages in Byzantium was a favorite motive for the decoration of ashlar work, and that extended farther thence from East to West (Venice, Messina, Florence, Pisa, Ferrara, Bergamo, Como etc., where white, red and dark green or black courses alternate, when the dark are the lower ones as a rule), and which was likewise adopted by the Renaissance.

45. Ashlar Facing of the Renaissance.

What the Italian middle ages first built and then decorated in contrast to the French, was likewise done by the Renaissance. (See many incomplete churches and public buildings, for example the Badia and the Cathedral facade in Florence before their reconstruction, and Fig. 53.). Most palaces in Florence and Siena, as well as many other cities, and so many churches appear externally as massive ashlar structures, while the mass of their walls consists of split stones or bricks, and the ashlar only form the "covering" or overlaid work. Thus the Palaces Pitti and Strozzi in Florence with sandstone ashlar, amazing by their great rustication, and also the Cancelleria in Rome with its facade surfaces of travertine stone and inserted window enclosures of white marble!

The unfinished Palace Farnese in Palazzo, buildings in Bologna and Florence (Figs. 54 a, b, c, h) afford an instructive view of the procedure in construction. Recesses for belts and architraves were left, supported by courses of bricks, w

102 which were again removed as required in setting the dressed stones; the spaces for the window enclosures were left, and only the opening for light was enclosed. Otherwise the bricks in the nucleus of the wall are set diagonally (Figs. 54 a, e, n) or again grooves are also left for setting the architectural members, as might be seen on the Badia near Fiesole, on the cathedral in Florence and on S. Croce there, before they were faced with marble. (Figs. 53, 54).

The nature of the execution at the different times, but especially that of mediaeval buildings (in which every stone must rest in its proper place), was usually at the cost of other esteemed and deserving or undeserving ways, since earlier and later, then as now, men built differently, good and bad, in the oldest and in the earlier time are nowise lacking examples of the fall of new structures, scarcely complete or even under construction still. This view, that Otte³⁵ has expressed with further examples and proofs, applies to building at all times and in all conditions; just as true for antique architecture as for that of the middle ages and the Renaissance to the most recent time. We therefore have to indicate neither advance nor decadence in execution, only good and bad, but nothing the same elevation as the works of the Greeks.

Note 35. Otte, H. Handbuch der kirchlichen Kunst-Archaeologie des deutschen Mittelalters. Leipzig. 1883. Vol. 1. p. 40 et seq.

The morbid longing, that strongly dominated the Renaissance period, to see the conception also executed as soon as possible, the pressure of the owners only permitted but few structures of the Renaissance to stand on an imposing elevation. Compare in this sense the execution in the court of the Cancellaria in Rome with the inconceivable jointing and the cementing in place of the marble archivolt on the arcade of the ground story. (Figs. 54 e, f).

110 In the construction of the walls in structural respects, and in the practical execution, not much is undertaken, that is novel. -- on the use of iron in the interiors of walls, d dowels, pins, cramps, anchors and the like, not much can be said with the condition of the monuments. But on the side of

form are to be noted attainments, particularly in the treatment and graduation of the ashlar work.

46. Dressing and Coursing of the Ashlars.

The mode of dressing and of decorating the ashlars, their forms, sizes and jointing have always been objects of special consideration, in which the bosses and their borders with the mode of jointing come into consideration.

Experiments are as old as the history of architecture; they were independently made at all times and in the lands of all masters, -- in Asia, Greece, France and Germany -- and yet they exhibit allied appearances and practices. Already the Biblical Solomon had the ashlars of the walls of his capital Jerusalem made of massive blocks of limestone, the stones enclosed by a border 5.9 ins. wide, the boss being fine pointed and slightly projecting -- one of the oldest examples of ash-lars with bosses and drafted margins!

47. Ashlars with Convex Bosses.

In royal Rome, on the Servian Walls on the Aventine and on the Roman Forum, on the Dipylon at Athens, on the walls of the Stoa of Hadrian in Athens, on the Etruscan walls near Fiesole, on the mediaeval Castles in Badenweiler and Rötteln, on the Neckar Castle near Heidelberg (Schadeck) and many other structures (Figs. 55 a to c) -- everywhere occurring the same; the drafted border with convex boss, the latter projecting sometimes more and sometimes less, up to 11.3 ins. at Schadeck on the Neckar.

48. Plane Ashlars and Ashlar Surfaces cut with special Projections.

Besides convex ashlars with drafted margins, plane stones with or without dressed edges likewise occur at all times and in all civilized states, and with them ashlars with bosses and without dressed margins, in Italy, France and Germany also being those with spirally cut projections on their faces, all before the beginning of the Renaissance period.

On the so-called Tomb of the Horatii and Curiatii near Albano, also called the Tomb of Aruns (erected about the Christian Era), is indeed to be seen the oldest fashion of this ornamental cut-boss, then later decadent varieties on the buildings of the Carlovingian time, on the Church at S. Georgen

in Baden, on the Minster in Mittelzell on the island of Reichenau, on the tower of Castle Röttler in Baden, on the Romanesque buildings of Aquitaine (South France), on the Church at Limburg in the Palatinate and on the crypt of the Strasburg Minster. Simpler bosses are found on the Cathedrals in Mentz, Worms, Spires etc., which are all dated quite correctly. These art specimens are pretty well scattered in time and place, so that one cannot assume any connection, but merely a caprice, that recurs when men did not know how to make anything wiser.

From this also could an art neither borrow nor learn, like the Renaissance, conscious of its high aims. Among the sketches in Fig. 55 a to O are to be seen the designs produced by a few strokes of slight depth, which serve to ornament bosses in a weak manner.

49. Ashlars with moulded Edges and Sunk Joints; Decorated Bosses.

111
112 In Roman art indeed appear ashlar with moulded edges, and also with sunken joints (Tomb of Cecilia Metella near Rome), and that the Renaissance gladly borrowed for its new creations, when it had abandoned the architectural fashion (rustication) of dressing ashlars in the Italian middle ages with high and low stones, and those of random length. ³⁶

Note 36. A fine collection of ashlar forms of the Renaissance is in Auer; Die Quaderbossirung der Italienischen Renaissance. Vienna. 1887.

How refractory and rude in effect is such rustication extending through several stories of a facade, with bold and uniformly projecting bosses, for example is shown by the Gothic Palace Ricciarelli in Volterra.

50. Diamond Paneled Ashlars.

Besides this borrowing of ashlar treatment from the antique and the middle ages, besides the continuation of the impulse thereby given, there likewise also occur new forms in the so-called "diamond paneled ashlars." Sometimes square, sometimes oblong on the visible surfaces, they exhibit their crystalline angles only nearly flat or strongly projecting, directly from the face or bordered by a moulding. Examples are seen in Verona (Palace Bellini), Venice, Bologna (Palace Bevilacqua), Cremona (quite square flat facets) and Ferrara (Palace

for ornament). Facets projecting and recessed, an octahedron and

man on the eastern work near the water gate below the bridge

at 87 and recessed cylindrical pillars on the eastern work of

Note 87. On the palace mentioned the diamond paneled ceiling was extended from the sidewalk to the roof cornice. In all over 12,000 "great blocks of marble cut with diamonds." The masters Elgin, Rossetti and George Frisvold, Mantuan sculptors, have the "responsibility for such a want of form." The court of the palace has splendid capitals of columns and

81. and 82. Joining.

The location of and and and joining for access when broken joining in a doorway was sometimes in the middle of the door corner, sometimes coinciding with the edge of the door (Fig. 80).

by the Renaissance masters, as seen on Palace Giovanni in the middle of the street, on Palace Giovanni is plain with the edge of the door, and is seen in the same manner as Palace Giovanni. On the latter a part of one and joining are also connected by the overlapping of the door (Fig. 80 b).

82. Palace Giovanni.

On the Renaissance masters of Palace Giovanni in Florence and joining likewise lie in the middle of the street, and as Palace Giovanni in Rome are extended "plain" and joining (Fig. 81) and joining were also usual in antiquity, where the corners are sometimes connected with one block. (Fig. 82 n).

83. The treatment.

The treatment of the 18th century (or single column) and

and and and a word to say.

In the 18th century 8. 3. it was usual around the Greek and Roman to have the base of the column for their entire extent, and to connect them on each other without respect, in the 18th century 8. 3., men were satisfied of their having the base, while making the contact surface sufficiently large to be able to bear the load. (Fig. 83 a, b, c, d).

de' Diamanti). Facets projecting and sunken, an oddity and transgressing principles of sound stone construction, are found on the ashlar work near the water gate below the Bridge of Sighs on Palace Doge in Venice, on Palace Gualdo at Vicenza, ³⁷ and reeded cylindrical ashlars on the ashlar work of the Sapienza and of the Quirinal in Rome. (Figs. 56, 63 c, d).

Note 37. On the potoces mentioned the diamond paneled ash-lars are extended from the sidewalk to the roof cornice. In all are 12,000 "great blocks of marble cut with diamonds." The masters Biagio Rossetti and Gabriele Frisoni, Mantuan sculptors, have the "responsibility for such a want of harmony." The court of the Palace has splendid capitals of columns and arcades. (1503).

51. End and Bed Joints.

The location of end and bed joints for bosses with sunken joints in antiquity was sometimes in the middle of the band border, sometimes coinciding with the edge of the border (Cecilia Metella near Rome), which arrangement was also followed by the Renaissance masters, as this on Palace Strozzi is in the middle of the sinking, on Palace Guadigni is flush with the edge of the boss, and is seen in the same manner at Palace Gondi. On the latter a part of the end joints are also concealed by the overlapping of the bossa (Fig. 56 p).

52. False Joints.

On the mediaeval masonry of Palace Vecchio in Florence the joints likewise lie in the middle of the sinking, and at Palace Linotta in Rome are executed "false" bed joints (false end joints were also usual in antiquity), where two courses are apparently constructed with one block. (Fig. 56 n).

53. Edge Treatment.

The treatment of the edge cutting (or angle cutting) did not proceed by reason of form; the material and the mode of setting also had a word to say.

In the 6 th century B. C. it was usual among the Greeks and Romans to dress the beds of the ashlars for their entire extent, and to course them on each other without mortar; in the 5 th century B. C., men were satisfied by only evening the edges, while making the contact surfaces sufficiently large to be able to bear the load. (Figs. 56 a to d).

The Renaissance made no use of the mode drawn at d in Fig. 56, but of that represented at a, b and c, whereby the mortar always aided (also perhaps only lime paste), to even up the irregularities of the contact surfaces, and to prevent the flashing of the deges, since the dressing of the bed and surfaces of the ashlar in the sense of the ancients, as being too much trouble and costly, did not come into consideration.

Insertion of strips of metal or of pasteboard, as usually done today in setting ashlar, are not known to me. On Arab and mediaeval buildings lead plates on the beds were in use.

54. Method of Working.

Yet a technical method must we mention for the cutting of the edges, which will show, that the early Renaissance did not adhere to the antique, but indeed to the mediaeval mode of working. The entire middle ages on both sides of the Alps shows in moulded work, wherein I also reckon columns and octagonal piers, a peculiar treatment of the angles. They are entirely cut by themselves, while the adjacent surfaces exhibit again a different dressing. As examples for this may serve the engaged columns on the exterior of the Cathedral in S. Spires, the moulded work on the exterior and interior of the Abbey Church in Baden Schwarzach, the little angle columns in Or S. Michele, the piers in the cloister court of S. Croce, the shafts and bases of the columns in S. Maria Novella at Florence, besides many others. (Fig. 57 a, b, c, d, f).

55. Polished Edges and Surfaces.

But now also appear rubbed edges with close joints and the use of the finest white mortar joints on Palace Strozzi in Florence, the great pilasters on the exterior of S. maria da Carignano in Genoa, even those in the plinth of the principal facade of S. Peter are similar, on the masks the marks of the tooth chisel are rubbed at the edges, and also the painted ashlar of Palace Giraud exhibit rubbed edges, with yet others. (Figs. 57 e, g, k, l, n, o).

Polished external surfaces are shown by the columns and mouldings of the early Renaissance in the interior of the Churches of S. Spirito and S. Lorenzo after antique and protorenaissance models, the later sandstone architecture of Chapel Medici and the Uffizi in Florence, with fine joints scarcely

0.08 inch thick. But the finest dressed visible surfaces of ashlar are found on the Cathedral in Como.

56. Buildings in several Stories.

To the many ancient forms the Renaissance added only the diamond paneled ashlar as a new means of expression for the animation of the outer surfaces of ashlar, which for a uniform distribution over the surface of a facade, as for the two palaces mentioned in Bologna and Ferrara, is according to my feeling, not exactly the happiest gift in the treasury of form of the new art, particularly not in comparison with another important novelty, the already mentioned graduation of the ashlar in expression in buildings of several stories, that must be designated as an achievement.

The antique sought to produce a graduation in appearance in its buildings of several stories by animating the lowest story by Doric, the second by Ionic, and the third by Corinthian half columns, and thus endeavored to create a transition from the severe through the elegant to the magnificent, which the Renaissance also directly adopted. But the outlay for the production of this effect was detailed and great, wherefore the early period sought to solve this on its palace buildings in a simpler way. A conscious or probably unconscious attempt in the latter sense is made on the mediaeval Bargello in Florence (Fig. 53), where men built with high and plain ashlar in the lowest story, in the next with those of lesser height and similar, and with small split stones in the uppermost, with tolerable uniformity of the courses in each separate story, while on the neighboring mediaeval Palace Vecchio the attempt is not made. (Fig. 59).

57. Graduated Rustication.

On Palace Pitti is made the first attempt in graduation, although the rusticated ashlar in the ground story were more accidental and more severe, while certain bosses project more beyond the others, though with entire irregularity, while in the upper stories is presented a greater uniformity with a lesser projection. (Fig. 60). A definite and regularly recurring band and a definite ratio of length to height is not brought out in the ashlar of the ground story, but on the contrary for the window piers of the upper stories is attempted

a regular alternation of joints. The stones are sometimes
set on the face (1 to 1); sometimes their ratio of height
to length extends to 1 to 2 1/2, while in the regular series
the normal ratio in extreme cases amounts to 1 to 2 1/2. In
the lower story also there are occasional joints of the same
ratio in places with a length of about 8 ft. 7 in.
The ratio of having groups of stones placed into a series
in a horizontal and scattered way belongs to the middle of
the old masonry. The old masonry, the scattered masonry,
even above the altar is terminated by the window sill course,
over this rise gradually placed stones in courses with weak
joints (square grooves), above these being the first course
masonry (Fig. 61). The same kind is also extended on the
to a height of 10 ft. 8 in. (Fig. 62), only with the differ-
ence, that instead of regularly projecting joints, those in
the ground story are covered according to a pattern.

The masonry in each story, as on Palace Street and its extension
is, and also no attention is paid to a regular joint-
ing, yet there is a certain, which can only be seen in the
lay of the stones especially; scattered masonry in the low-
er story, above this being solid and firm masonry, as in
the regularly smooth external face, and the high masonry
a slight magnification -- especially in the upper story, although a
certain masonry is evident.

55. Dimensions of Stones.

The varying of the dimensions of the stones, 1.5, 2, 2 1/2,
proportion of height to length of face is not uniform in the
building as pointed out in Palace Street to be noted, where
the masonry is broken down into the same pattern in all
the stories except only a slight and this variation in exten-
sion. It goes from 1 : 1 1/2, 1 : 2, 1 : 2 1/2, 1 : 3,
1 : 4 to 1 : 5 1/2, a considerable, that is to say
more or less and irregularly, so that too little is to
be said in so many modern buildings.

56. Stone-masonry's marks, projections of stones, and work-
ing marks.
On the face of the ground story of Palace Street,
Stone-masonry's marks are still to be found in the middle of the

a regular alternation of joints. The stones are sometimes square on the faces (1 to 1); sometimes their ratio of height to length extends to 1 to $5 \frac{1}{2}$, while in the antique period the normal ratio in extreme cases amounted to $\frac{1}{4}$ to $2 \frac{1}{2}$. In the lower story also rests the greatest ashlar of the Renaissance in Tuscany with a length of about 30 ft.?

The merit of having brought the novelty first into a system in a monumental and perfected way belongs to the builder of Palace Riccardo, the patriarch Michelozzo. The bold rustication above the plinth is terminated by the window sill course, over this rise smoothly dressed ashlars in courses with sunk joints (square grooves), above these being the flat courses masonry (Fig. 61). The same kind is also executed on Girolamo da Sangallo's Palace Gondi (Fig. 62), only with the difference, that instead of roughly projecting ashlars, those in the ground story are curved according to a pattern.

But on both is just as little required equal heights of the courses in each story, as on Palace Pitti and its mediaeval predecessors, and also no attention is paid to a regular bonding, yet that is attained, which art can only do with the outlay of its richest expedients; fortified strength in the lower story, above this being solid and firm elegance, at last the entirely smooth external faces, and the rich terminating a slight magnificence -- entirely in the surfaces, without other architectural elements.

58. Dimensions of Stones.

The retaining of the dimensions of the stones, i.e., the proportion of height to length of face is not uniform in the buildings mentioned nor in Palace Strozzi to be named, where the ashlars with bosses formed after the same pattern in all the stories exhibit only a slight and fine gradation in expression. It goes from 1 : 1, 1 : $1 \frac{1}{2}$, 1 : 2, 1 : $2 \frac{1}{2}$, 1 : 3, 1 : 4 up to 1 : $3 \frac{1}{2}$, a circumstance, that lends the whole more life and individuality, to which too little attention is paid in so many modern buildings.

59. Stonemason's marks, Projections of Bosses, and Working Tools.

On the boss stones in the ground story of Palace Riccardo, Stonemason's marks are still to be found in the middle of the

rough boss in the simple form of a circle (o) and of a plus sign (+), which reappear on none of the other palaces (Figs. 57 h, i). For the massiveness of the bosses on this masonry may the statement speak, that on the terrace walls of Palace Pitti they project 3.23 ft.³⁸

Note 38. But these latter are of later date. See the Section on Palaces.

As for the working tools employed for dressing these stones and constructing the walls, Figs. 64 and 65 show them, according to the statements and drawings of master Nicola Zabaglia from his work published in 1743 and that of Alberti.³⁹

Note 39. Representation from Nicolo Zabaglia. Contignationes ac Pontes etc. Rome. 1743.

60. Hoisting Apparatus.

Trades are conservative; men employed then the same apparatus as in the preceding centuries. Working machines had not yet encroached.

121 The masses for the construction must be moved; they must be quarried, transported to the building site, and be raised for buildings of several stories; arrangements were necessary for hoistings and setting the stones and for the standing place of the workmen. The Renaissance masters were confronted by problems, since they had to do with works belonging with the greatest of all times. Yet they could count upon arrangements tested for centuries, beyond which they never advanced.

The ancient peoples had to provide and set mighty building stones; granite monoliths up to more than 105 ft. high, the obelisks in Egypt; wall ashlar with faces 19.7 × 3.9 ft. (city walls in Jerusalem); doorway lintels 29.5 ft. long, 9.8 ft. wide and 3.3 ft. deep (tomb of the king in Mycenae); in the time of Pericles must be hoisted marble beams and architraves over 19.7 ft. long. The greatest building stones were required in the Temple terrace at Baalbec (Great Temple of Antoninus Pius of 133-161 B. C.) 62.3 ft. long, 13.1 ft. high and wide, that further were to be raised 23.7 ft.

Especially was it the time of Constantine the Great, that was pleased to employ great monoliths; before him Diocletian had brought from the East the immense granite columns of 14.8 ft. circumference for his Baths. This "volumetric scale" was

even applied to the creations of sculpture by the 3rd and 4th centuries A. D.! The Tomb of Theodoric at Ravenna utilized for its covering a single circular block of stone over 36 ft. in diameter, dressed on all surfaces, that was brought from Dalmatia, and must have been raised on the external walls.

The Garlovingians and also particularly the rulers in Italy at the time of the early Renaissance pleased themselves by the use of great stones as material for their buildings, evidence of which is given by the granite columns in the quarries on the mountain road, and the ashlar with bosses mentioned on Palace Pitti in Florence.

We see Egyptians, Greeks, Syrians, Romans, Franks and Italians in these endeavors in the same way, only at very different times. But these endeavors possess and also employ no common middle or end point.

The middle ages maintained itself on this side of the Alps, and also beyond them in a rather more limited measure, free from this mania for reasons previously given.

With the introduction of lime mortar on a great scale in building, the use of great stones set entirely without mortar as materials for walls and vaults diminished in many places--whereby the walls themselves increased in thickness.

Great works in setting were executed by the aid of simple hoisting machines, described by Vitruvius.⁴⁰ The roller and the pulleys, the windlass and treadwheel, were already known to the ancients in the earliest times. Men and animals were compelled to operate them, as shown by Egyptian and Assyrian representations in reliefs, of which we give a representation in Fig. 67,⁴² that exhibits the stone colossus on a sledge with rollers under it, being hauled forward by human hands with ropes, assisted by levers.

Note 40. See Book X, Chap. 2 et seq.

Note 41. Representation from Fontana, C. Il Tempio Vaticano and its origin. Rome 1694.

Note 42. Representation from Layard, A. H. Discoveries in the ruins of Nineveh and Babylon. London. 1853.

For raising smaller dressed stones the ancients already employed the "lewis" and the "tongs," tools that we have in use today. (Figs. 64, 65).

... as formerly was Egyptian, to have and use no one
of the greatest Egyptian. Now they solved this, the work of
... mentioned and the ... taken from it (this).

60. 60. 61.

... and ... utilized for their purpose ...
... the ... were ... solved and ...
... with the aid of ...
... and ... would be a ... for the most
... .

61. ...

... the ... on engineering, on those
... in the ... for the raising of heavy
... of great height, and for the ...
... for the ... of the ...

... the ... as these ...
... for the ...
... of the very ... of S. ...
... to the ... of ...
... (...) ...

... as the main ...
... of the ... of the ...
... at a ... was ...
... the ... and ...
... and ...
... it is not to be ...
... according to various ...
... the ... of the ...
... .

... the ...
... and ...
... of the ...

124 How the Renaissance masters shaped their rollers, pulleys, windlasses and the like, we are again instructed by master Zabaglia and Cavalier Fontana, from whose work are taken the illustrations (Fig. 66⁴¹). They were also set before the same problem as formerly the Egyptians, to raise and set up one of the greatest obelisks. How they solved this, the work of Fontana mentioned and the drawings taken from it tell (Figs. 68, 69⁴¹).

Egyptians and Assyrians utilized for this purpose thousands of slaves; the Renaissance used horses instead, solved the problem without accident, and finished the work without a model, which even with our awkward technics with the aid of steam engines and electricity would be a problem for the most skilful.

61. Scaffolding.

Still higher were the requirements on engineering, on those gifted in the domain of mechanics, for the hoisting of heavy building stones on buildings of great height, and for the construction of centerings for the vaulting of the colossal domes of S. Maria del Fiore in Florence and S. Peter in Rome.

What was the particular endeavor at these two structures and also at others similar, for example for the supporting arches of the very much smaller dome of S. Maria di Carignano in Genoa, according to the sketches of Alessi, (See Fig. 70 and its explanation), was to avoid the centering of the great supporting arches and of the dome from the ground, and to allow them to commence or stand only on the main cornice, the imposts of the vaults of the nave, or the walls of the drum. The first attempt at a great scale was made to his eternal fame by Filippo di Ser Brunellesco, which the Roman and German masters of the Renaissance and others followed, concerning which it is not to be ignored, that the antique Roman masters had made the same effort, according to various indications. (Recessing the pier at the imposts of the arches of the Basilica of Maxentius).

In Florence the pointed form of the dome considerably facilitated the centering. Brunellesco had recognized the advantages of this for the construction, as he was also clear in regard to the effect of the forces in his cloister vault. At 1

least in its lower parts, the vaulted form permitted the possibility of the erection of even this mighty vault without complete centering on strong supporting centers. Owing to the forms and connection of the two shells, the double dome is comparatively light, and by the peculiar construction the outer and inner shells are almost to be regarded as a single one: the masses are piled just where effective (Fig. 72). For almost half its height the dome could be erected without supporting centering, the lower quarter indeed with horizontal coursing of the stones. (Thus not ranging to the centre). Strong bearing centering first became necessary for the extent of the upper portion of the vault to the vertex, thus for a height of about 65.6 ft.

129. Nelli gives in his work, "Pianta ed Chiesa di S. Maria del Fiore etc., Florence, 1755, a rather confused representation of the centering of the dome, reproduced in Fig. 72, practically improved. But we can yet more safely assume for this, that the working centering for the dome was built from the main cornice, but indeed in a somewhat different way from that given by the drawing mentioned, that may be deduced from the existing holes for the centering at the springing of the dome; that this was further composed of four main trusses, which were built from an angle of the dome to that lying opposite and fastened by anchors extending through the openings in the dome, that but a single intermediate platform of the centering is assumed, and that the trusses composing a truncated octogonanal pyramid were connected in their upper half by two continuous horizontal rings of timbers. Many of the connecting members are then drawn as being held together by iron bands, ropes or chains. How the centering was arranged for the construction of the tunnel vaults over the middle aisle of S. Peter at Rome is proved by Fig. 71, according to Fontana.

Likewise on the basis of the statements of Fontana was drawn by the author the perspective section through the construction of the dome and the corresponding centering for the vaulting of the dome of S. Peter in Rome (Fig. 42⁴³). Also here the pure hemispherical form was changed in the line of the vault, although Michelangelo had given it in his wooden model. The advantages of the line of the pointed arch are not reali-

realized, and the raising of the semicircle is small. It was only assumed on account of the great loading of the vertex by the lantern. Otherwise as in Florence, by the adoption of a double dome with a hollow space, everything was done to lessen its weight as much as possible. According to the number of ribs, as many centering arches were necessary for the construction, these being connected together by rings of timbers. The supporting centering also here first rose from the main cornice of the drum admitting light. The rational subdivision of the masses of the dome into supporting ribs, filling a and enclosing surfaces, made possible a smaller use of materials, and this made again a lesser weight of the whole, from which resulted no excessive dimensions of timbers for the supporting construction. (See Fig. 73, after Simil).

To devise and construct the centering is a technical undertaking to be esteemed just as highly as the execution and construction of the vault itself!

Note 43. Durm, J. *Zwei Grosskonstruktionen der Italienischen Renaissance. Cathedral dome in Florence, Church S. Peter in Rome (Berlin 1887); Dome of Umlta in Pistoja, and that of S. Maria di Corignano. (Berlin. 1902).*

Likewise great geniuses like Leonardo da Vinci and Giuliano da Sangallo did not disdain to experiment in the construction of machines for transport and hoisting, as proved by the sketches left by them. For example, compare the representations of such in "Il Libro da Sangallo, Vatican Barberini manuscript No. 4424, with introduction and notes by Christian Hülsen". Leipzig. 1910. p. 64, 72, 74. (Machine for raising a column). Also Appendix Plate D. Pulleys for hoisting big stones.

Section V. Brick Architecture.

Construction in ordinary and artistic brickwork.

"If we consider the brick architecture (in Italy) more closely, there results as characterizing it: the combination of relatively small pieces, thereby causing the small projection of the cornice in proportion to its height. -- Then a richer decoration by flat ornament; the greater variety of the cornices, based on the possibility of the alternation of bricks of the most diverse shapes; then the decoration by variously colored or even glazed materials.

To a chief peculiarity of bricks belongs in particular the capacity to readily receive ornaments in low relief, so that these may be produced at the least cost, greater perfection and refinement than in natural stone. This peculiarity makes bricks very suitable, where with small means, refinement in architecture is to be attained. -- The beautiful effect of the flat relief, whether as the ornament of certain parts of the cornice and frieze, or as more independent representations of figures (Luca della Robbia) and decorative work, is generally recognized, and cannot be replaced by any painting.

On cornices prevails by far a peculiar treatment thereof, corresponding to the material; but rarely are they imitated from forms belonging to other materials, though even these are modified. -- A section with not much projection in proportion to the height is peculiar to cornices.

In the brick architecture of Italy there occurs but seldom, and then as a special ornament on very small areas, the use of materials differently colored, etc.

L. Runge. (Preface to contributions to the Knowledge of the Brick Architecture of Italy). Berlin. 1846.

62. Manufacture of Bricks.

Scarcely a country of the earth possesses such abundance and such a great variety of natural building stones as Italy, and yet in following ancient traditions, it employed artificial ones shaped by human hands. And not the worst works are those produced thereby, from small utilitarian structures to the grandest monumental architecture.

Thus to the walls of natural stone is added the masonry of artificial stones, partly consisting of hand made pats of cl-

clay mixed with chopped straw and dried in the sun, or of moulded blocks of clay burned in a kiln. Laid in bonded courses, they were held together by mortar and joined in a solid mass. Pressed bricks were also eventually employed as a facing for masonry of less worthy nature, of poorer quality and appearance (walls of split stones and stone spalls), where extreme economy was practiced in this. Solid walls of bricks are a rarity in the earliest times in Italy, but on the contrary they again play an important part in important structures, especially in the vaulted construction, that without it indeed would scarcely have reached its high development.

Walls of airdried bricks were already known to Assyrian and Egyptian antiquity. The Egyptians employed bricks measuring $9.8 \times 4.7 \times 2.5$ ins. with Nile mud as the binding mortar. In spite of the nearly rainless climate the external faces were covered by protecting stucco. (Piece of wall near the Great Sphynx not far from Cairo). The Assyrians joined their airdried bricks with bitumen and partly protected them from the effects of the weather by covering the weather side by a kind of glazed and colored coating. (Museum of Louvre in Paris).

Walls of burned bricks appeared in Greece and in Italy at the same time in the 4th century B. C.. Light yellow and red bricks were burned in Rome, and both kinds were often employed together on the same building, as shown by a tomb before Gate S. Sebastiano in Rome (usually termed Temple of Deus Rediculus), where plinth, pilasters, architrave, main and gable cornices, window enclosures are constructed of red materials, on the contrary the wall surfaces being of light bricks. This polychrome treatment and the accenting of certain structural elements of the building produced thereby permits the conclusion of an intentional monumental polychromy with bricks.

The construction of these tombs on Via Appia is singular, since also all decorative parts of the building, such as bases and capitals of pilasters or columns, beads, cornices and architrave members are made of normal bricks in successive courses, a procedure likewise shown by the external walls of Amphitheatre Castrensis in Rome, adorned by half columns.⁴⁴ The ornamental parts produce the impression, that after setting they were carved by sharp strokes from the normal bricks.

Stiller ⁴⁵ on the other hand believes, that these pieces were first modeled whole, then carved and burned, since bricks carved afterwards would not be durable.

Note 44. Durm, J. Die Baukunst der Etrusker und der Römer. Part II. Vol. 2. of this Handbuch. 2nd edition. Fig. 259, p. 242.

Note 45. Zeits. f. Bild. Kunst. Vol. 13. (1878). p. 114.

I adhere to the first assumption. The good Roman bricks could be subjected to requirements different from those for our present products! The normal bricks of the wall surfaces are also cut where they intersect the moulded pieces, and they have lasted as well as the others on the building. These are 9.4, 9.8 to 11.8 ins. long, and have a thickness of but 1.2 ins. with mortar joints of 0.12 to 0.20 in. thick. A tomb likewise on Via Appia shows behind this finely jointed brick masonry the characteristic work of the imperial period.

The works mentioned must be regarded as brick buildings, but contrary to the mediaeval-Northern or the custom in Lower Germany, the joints were not accented in any particular or striking way.

63. Ordinary Brick Construction.

Even earlier men accordingly distinguished between ordinary and artistic brick construction. What the Jews in Moses' time must have made in Egypt was materials for ordinary brickwork, i.e., for use in masses; what the Roman makers and the imperial brickyards supplied was intended for the same purpose indeed, except that also there were prepared bricks of special shapes according to special drawings and models and in different colors.

This is a construction without stucco, the material speaking for itself, and without producing new art forms. If such were required, men were satisfied with traditional ones.

The Etruscan and antique-Grecian ⁴⁶ and the Roman art of building with bricks of special shapes and colored slabs of terra cotta as a covering material for woodwork and stonework, followed the "Early Christian" architectural period in Italy, that produced with the normal Roman bricks a peculiar formal expression, that can scarcely make any claim to art. It is "rough brickwork" in the strongest signification of the words.

Only a few ornamental members are of special shapes. By headers, bricks set on edge or obliquely and horizontal courses, projections of certain courses in unbroken and interrupted layers, by the arrangement of arched friezes and small arches, men sought to produce greater projections, enclosing or protecting members. What the great volute consoles had formerly done, these must do, which moreover already appeared in Pompeii.

Note 46. Durm, J. *Die Baukunst der Griechen*. 3rd edition. 1910. p. 371. Painted and burned terra cotta slabs at the Temple at Theron.

Examine in this sense the cornices of S. Stefanoin Rome, Ravenna, Brescia, Bologna, Lucca etc., Fig. 78 and many other examples in the books and plates of H. Hübsch, O. Mothes, Dehio Agincourt, as well as L. Runge, which extend down into the early Renaissance period. Here played no part, neither the model, chisel, stucco or color.

The modern bonded brick box construction was at a great scale already in vogue for monumental structures. Piers and columns were made of shaped or normal bricks, even if kinds of natural stone were not preferred, as earlier in Pompeii, Rome, Tivoli etc. The Western and Eastern Roman, and with it Early Christian architecture, had long since perfected in the domain of brick architecture, what had not even begun to dawn in the North of Germany in technical matters. (Ordinary brickwork in the Mark of Brandenburg first occurred in the 11th or 12th century).

Besides mortar joints, which in ordinary brick masonry are frequently as thick as the bricks themselves, there also appear the green glazed round tiles as ornaments. (See the Early Christian bell towers at Rome).

Herring-bone courses, the stepped and ogee-shaped small corbels, the dentils, but particularly the cornices constructed with corbelled diagonal bricks frequently reappear in the late middle ages and in the early Renaissance.

The still widely spread opinion, that a peculiar brick style (ordinary brick construction ?) exists in Italy, may be further maintained indeed by the enumeration of the examples, and cannot be set aside by defects in memories of others, who might deny the existence of an ordinary brick construction in

Italy. It is also still proved by works of the middle ages and of the Renaissance in that country.

If it also be elsewhere conceded, that brick architecture also played a part in Italy at all times, but never found a mode of expression, "that would only be executed in this material," then is the second part of the saying indeed incorrect, in view of the examples mentioned. The Early Christian cornices of bricks have indeed no later peoples to imitate them in cut stone. The decadents have never been so stupid at any time.

The middle ages employed in Italy and especially in Upper Italy visible brickwork for its buildings, both on the surfaces of the facades next the streets and in the open courts, as well as in the interiors of church buildings, as examples in Pavia, Chiaravalle, Milan, Crema, Cremona, Caravaggio, Monza, Brescia, Bologna etc. exhibit,⁴⁷ which have throughout red brickwork with white joints.

Note 47. See illustrations of such churches in Gruner, L. Terra Cotta Architecture of North Italy in 14th, and 15th Centuries. London. 1867. The layer of stucco mentioned is scarcely 0.04 in. thick.

134 On the Certosa near Pavia (Plates II and III) the bricks are tinted blood red and the joints are painted white, indeed as required by irregularity of the materials in form and color and by the careless mode of execution. Likewise here the antique again stands higher than the middle ages and the Renaissance.

The dimensions of bricks at the mediaeval Baptistery in Cremona are; lengths of 9.1 to 9.8 ins., thickness of 2.55 ins. with mortar joints 0.2 to 0.4 in. thick.

64. Decoration in Ordinary Brick Architecture.

For a richer decorative effect of the exterior besides the bricks are also added small strongly colored (preferably green) surfaces of painted stucco (Chiaravalle, S. Gottardo in Milan), also network patterns, produced by the bonding of red and yellow bricks. (S. Francesco in Pavia).

Translated into marble, this mode of decoration is found on the wall surfaces of Palace Doge in Venice, and of the higher portion of the facade walls of the Basilica in Vicenza, where

and white mosaic also are combined in a regularly repeated pattern of ornamentation which is further embellished by large, rounded, shell-like motifs.

Special ornaments in the architecture with the ornament on a green ground or reversed and with a good decorative effect is found on Palace Vissara in Gavi; an alternation of various ivy crossed leaves in the mosaic, green conchas, yellow and green foliage bands, white bands, enclosed by red and green leaves, on the roses of the Vissara near Gavi (Plate II).

The art of glazing in colors likewise has been examined and described by the architect mentioned later, in regard to the very interesting Church of S. Francesco at Bologna, especially and scientifically restored by the Bologna architect A. Ghislandi. The glaze exhibits a rich decoration by layered bands of alternately white and green majolica (resembling the decoration of the facade surfaces of Early Gothic town hall towers), and a green white marble cross, enclosed by a border in gleaming red and black and white stripes. The thick majolica and painted with ornaments and animal forms, that are again enclosed within a red setting. The conchas consist of red brick arches enclosing semi-circular white and blue surfaces. The arches at the windows are composed of alternating red and white bricks. The brick walls exhibit various of tiling, that came from the 14th century. The piers were not painted, only the outer surfaces of the yellow piers were colored red (painted red on the outer only), as this color was determined after the removal of the mosaic later work and on the yellow piers. The piers still existing consist of yellow and red bricks (other data). The border was also painted red.

In the 13th century yellow bricks were chiefly in use in Gavi, and in the 14th and 15th red bricks predominated. Likewise the piers of the latter were painted yellow, and when the mosaic Church of S. Francesco at Bologna originally exhibited the same red tiling as in S. Francesco, except that there were also yellow bricks. The piers still existing consist of yellow and red bricks (other data). The border was also painted red.

In the 13th century yellow bricks were chiefly in use in Gavi, and in the 14th and 15th red bricks predominated. Likewise the piers of the latter were painted yellow, and when the mosaic Church of S. Francesco at Bologna originally exhibited the same red tiling as in S. Francesco, except that there were also yellow bricks. The piers still existing consist of yellow and red bricks (other data). The border was also painted red.

Note 48. See the interesting and beautifully executed and

red and white marble slabs are combined in a regularly repeated surface pattern, a method of ornamentation which is indeed justified for large unbroken wall surfaces.

Scroll ornaments in the spandrels with red ornament on a green ground or reversed and with a good decorative effect is found on Palace Visconti in Pavia; an alternation of variously colored stones in the arches, green consoles, yellow and green foliage bands, white beads, enclosed by red and green leaves, on the apses of the Certosa near Pavia (Plate II).

The art of glazing in colors mediaeval terra cotta has been examined and published by the architect mentioned later, in regard to the very interesting Church of S. Francesco at Bologna, splendidly and scientifically restored by the Bolognese architect A. Rubbiani. The gable exhibits a rich decoration by inserted disks of alternately white and green majolica (recalling the decoration of the facade surfaces of Early Christian bell towers), and a great white marble cross, enclosed by a border in gleaming red and black and white stripes. The disks mentioned are painted with ornaments and animal forms, that are again enclosed within a red setting. The cornices consist of red brick arches enclosing semicircular white stucco surfaces. The arches at the windows are composed of alternating red and white bricks. The brick walls exhibit vestiges of tinting, that came from the 14 th century. The piers were not painted, only the outer surfaces of the yellow bricks were colored red ("tinted red on the brick only," as this could be determined after the removal of the stucco later applied on the yellow bricks. The partly still existing coat of stucco is of later date). The portal was also tinted red.

In the 12 th century yellow bricks were chiefly in use in Bologna, but in the 14 th the red bricks predominated. Capitals and bases of piers are of Macigno (sandstone). Likewise the piers of the interior were tinted yellow, and which the Mighty Church of S. Petronio at Bologna originally exhibited the same red tinting as in S. Francesco, except that there additional painted figures adorned the surfaces of the piers.⁴⁸

Note 48. See the interesting and beautifully executed publication; *La Chiesa di S. Francesco e le Tombe dei Glossatori*. Bologna. Restored in 1886-1890. Historical and illustrative

notes by Alfonso Rubbiani.

Entirely visible is also the "ordinary brickwork" with the peculiar patterns on wall surfaces of various external walls, which entirely excludes a stucco covering, to be recognized on the wonderful architectural group of S. Stefano in Bologna, a cluster of small churches and chapels, an apparently irregular group of buildings, properly termed Monastery Gerusalemme. 49

Note 49. See the plan in O. Mothes. *Baukunst des Mittelalters in Italien*. Jena. 1883. Fig. 95. p. 284. Likewise those of a rather dry view of the exterior and some details, whose beginning is to be referred to the 4th century A. D. Also brick buildings at Murano should be considered here.

Like Early Christian architecture, so the mediaeval took its own way in the domain of brick construction, in which the latter caused a richer ornamental development of the details, as well as a combination of natural stones and bricks in an increased manner, and to the many colored and glazed materials further added plain and painted stucco. The Early Christian brick box style was dropped for the exterior; an artistically important advance in brick architecture including new elements of decoration. Instead of poverty appeared affluence, and in the time of the early Renaissance wealth and magnificence of decoration.

Even if it is now sometimes said, that "men externally concealed bricks by stucco, the members and ornaments were wrought with the chisel after setting as if from split stone," then at most the procedure mentioned may be true, all else being based on an error, as well as the statement, that the questionable assertions in Bologna may be settled by the unluckily chosen examples of S. Stefano and S. Petronio.

Likewise the architecture of the Renaissance did not stop halfway in its brick buildings. It carried further the artistic, begun by the middle ages, employed in its facade architecture sandstone and limestone besides the well burnt dark and light bricks, left all visible, extended stucco over free supports and large wall surfaces as a basis for decorative paintings, enhanced the charm of terra cotta by the richest relief ornamentation on pilasters, capitals, architraves, fr

of these projections of the architectural parts was made the most extensive use, indeed with a wealth of forms never again repeated. The alternation of the bold and the delicate, the white or painted surfaces and the dark or gilded, the simple and decorated ornament produced a rich and varied effect. The decorative painting on stucco was suggested by a mannerism which applied bricks, which then found a rich expression in terra cotta decorations and friezes in fully varied forms.

The architectural forms of the Renaissance were, like those of the Middle Ages, in Ferrara, which only exhibits the well-known transition in Lombard style, but where all ornaments are avoided (fig. 74). The Renaissance with projecting window frames. Such a kind is also given in the most solid form of the Renaissance in Italy. The House of the architect Giulio Romano in Ferrara, with its windows having segmental and round arches, should be mentioned.

In contrast with this the facade of a Bologna house of the 16th century is more ornate in its details (fig. 75), and even that of the Palazzo Communal of Bologna (fig. 76), and even that of the facade of the castle in 1599, and which features all the details of brick architecture of the Italian Renaissance (fig. 78) with the corresponding details.

The poor order facade of Antonio's House in Ferrara was contrasted with the overrich street and court facades of palaces in the city. The easy sweeping of the classical and the possibility of almost careless repetition and modification of ornaments and figures are found in the finest classical forms.

friezes, cornices, small arches, great bearing arches, enclosures of windows and doorways, where the peculiarities of the materials mentioned in the preceding text were taken into account. Of the possibility of producing ornament by modeling on slight projections of the structural parts was made the most extensive use, indeed with a wealth of forms never again attained. The alternation of the tone of the dark red bricks with white or painted stucco surfaces, with figure ornament, with plant and grotesque ornament produced animation and created a magnificent appearance in courts and on the streets.

137 The perishable painting on stucco was succeeded by a monumental one with glazed bricks, which then found a rich expression in terra cotta medallions and friezes in fully varied colors, partly gleaming in golden borders.

But whoever had no money for this was also satisfied with the simplest, like that shown by the little House of Ariosto in Ferrara, which only exhibits the well known inscription in doubtful Latin, but where all ornament is avoided (Fig. 74), and where the street facade alone shows "ordinary brick architecture" with projecting mortar joints. Such a kind is also again given in the most splendid time of the Renaissance in Italy. The House of the architect Biagio Rossetti in Ferrara with windows having segmental and round arches should be mentioned here.

In contrast with this the facade of a Bolognese house of the 17th century, that was rebuilt in Via Galliera by the Historical Commission of Bologna (Fig. 75), and then that of another from the "Sforza epoch" in Milan, again rebuilt in the court of the Castle in 1909, and which foresees all possibilities of brick architecture of the Italian Renaissance (Fig. 76) with the corresponding details.

138 The poor brick facade of Ariosto's House in Ferrara was contrasted with the overrich street and court facades of palaces in Cremona with their little columns, candelabras, and sculptures on the cornices. The easy shaping of the material and the possibility of almost careless repetition and duplication of ornaments and figures put forth its finest blossoms here. Of the Early Christian or mediaeval ordinary brickwork without artistic forms are here nothing more than vestiges, every-

everywhere being the free working of an almost unrestricted imagination. The mode of expression was restricted by the character of the material; but even the restraints were wonderfully set aside. Everything possible with the material was undertaken, its weaknesses were conquered, necessity made a virtue, and the genius of Renaissance architecture could also view triumphantly these works nevermore attained or excelled.

Also in the decoration when strongly effective architectural forms were not to be forced from the material, such as were possible in the procedure with cut stone, then appeared in its place creations of infinitely refined charm and high architectural worth of special character. Wonderful works are presented in this way by the cloister courts of the Certosa near Pavia in their magnificent abundance of sculptures, resting on fine marble supports, with wide spanning uncolored vaulted ceilings. One recalls there the splendid works of the Cosmati, where some have wrought the same charm.

On the examples (Plate III) the columns are of white marble, the spandrels of the arch-column architecture are stuccoed and variously painted, while the archivolts, the medallions and the cornices show the uniform glazing red terra cotta. (In part recently tinted).

The enclosing walls of the building are constructed of bricks of irregular colors, shapes and mortar joints, thus not blameless in execution. These bricks (like cases also to be indicated at other places, for example in Bologna) are covered by a finely smoothed stucco scarcely 0.04 in. thick and colored red, on which are painted the regular joints with white limewash. A doubtful substitute for beautiful material and fine work!

But it corresponds in no wise to the facts, that "all Renaissance palaces in Italy built of bricks were covered with thin stucco colored red, the stucco surfaces polished and coated with varnish (the painted joints being left dead), that all ornaments were shaped and chiseled afterwards, or that the bricks were everywhere stuccoed." Any generalization must be excluded in general.

The constructing builder sees with regret, that in the fewest cases, and not even in publications on brickwork, are gi-

given the jointing and bonding, and but rarely is any information given on the construction of the projections of the belts and main cornices. For example, what B. Gruner has given in his magnificent work thereon is too little to draw any certain conclusions therefrom. Likewise Runge is not very communicative concerning the arrangement of end and bed joints, and the bonding of shaped bricks with the masonry of normal stones. In the new series of his "Contributions to the Brick Architecture of Italy," Berlin, 1853, he gives us the construction of a brick column with flutes, that recall similar works in Pompeii and Rome. Half columns of combined tufa and bricks, externally coated with stucco, are formed in the circular court of Palace Madama near Rome, after antique Roman models. The architraves placed above them, as already stated, are constructed with bricks as horizontal arches. (Fig. 92).

In the earlier portion of the work mentioned (Berlin, 1846) are mentioned the parts of the walls described by me at S. F 142 Francesco in Bologna and their covering by majolica slabs, on Plate 24 being the construction of a belt on a house at Ferrara, but without further explanation in the text, as well as the spandrel figures standing on consoles, of a court of the Certosa near Pavia, whose height is comprised of four pieces.

On the question of painting terra cottas, L. Gruner (p. 51, edition of 1867) takes position with reference to the colors given by him on the main cornices next the courts of the said Certosa, by stating that ; "for enhancing the beauty of appearance, certain parts are coated with a kind of oil varnish, or painted. The colors had almost entirely disappeared, but still sufficient remains and vestiges thereof existed for deciding what parts were painted." (See Plate II). The ground of the arch spandrel in the court is given as yellow in Gruner, but Runge prefers blue for it. According to the great main court, Gruner assumes the foliage of the consoles and other foliage to be colored green, the beaded astragal white, and the other ornamentation yellow. I saw it in 1866 for the first time, repeated this later and last in 1912. I must admit that the colored coating mentioned has suffered greatly in this interval, which may be connected with the procedure employed, and Strack has given opportunity to add to Gruner's

According to a question mark, which I might remove according to my latest visit in Jan. 1916, since the colors are always so different. The wall consists of the same bricks and mortar, and on the surface there are painted white lines and a red and green ground; bricks on the contrary are of a different color.

35. AUSTRIAN BRICK ARCHITECTURE.

In his investigations work on the brick architecture of the middle ages and the Renaissance in Italy (Berlin, 1888), Professor H. Schick makes some statements on the construction and treatment of the Austrian brick architecture, and says concerning the construction of the exterior walls, that they are not entirely a regular building in course (as what I have seen in of the enclosing walls of St. Maria della Grotta in Milan) (p. 84) as well as of St. Maria near St. Odo in Milan, that there is a system in the construction, and then only in the red and yellow colors. The dimensions of the bricks are 19.8 mm. long, 4.7 to 5.3 mm. wide and 1.8 to 2.1 mm. thick, with joints of 0.25 to 0.45 mm. thick.

The corners in the walls are covered by pointed and rounded tiles, others with horizontal grooves, but mostly by pointed tiles. The building in Austria is the same and consists of the same material as the building in Austria (p. 84). The windows in the houses are still enclosed by pillars with capitals, free-standing or gabled. The enclosure of the entrance portal is particularly of the greatest richness on the exterior (p. 79).

There, pillars and columns, where their surfaces were covered by thin cement. Others were likewise covered by a cemented shell and were painted white, and finally were painted in a bed of mortar. The construction of the exterior wall work. Now the last wall work has not become evident to me, and there is a very noticeable contrast in the color of the exterior wall work. (Statements of antique houses) In the construction of wall surfaces by light and dark colors, the last exterior wall work has not become evident to me.

statements a question mark, which I might remove according to my latest visit in Jan. 1912, since the colors are always to be distinguished yet. The arch spandrels of the court arcade are stuccoed, and on the stucco ground are painted white ornaments on a red and green ground; Runge on the contrary desires blue to be assumed for these.

65. Artistic Brick Architecture.

In his meritorious work on the brick structures of the middle ages and the Renaissance in Italy (Berlin, 1889), Professor H. Strack makes some statements on the condition and form treatments of the artistic brick architecture, and says concerning the construction of the enclosing walls, that they seldom exhibit a regular bonding in courses (see what I have said of the enclosing walls of S. Maria della Grazie at Milan (p. 94) as well as of S. Maria near S. Celso in Milan), that further a pattern in the bond seldom occurs, and then only in red and yellow colors. The dimensions of the bricks are 10.2 to 12.2 ins. long, 4.7 to 5.9 ins. wide and 1.6 to 3.1 ins. thick, with joints of 0.22 to 0.40 inch thick.

143 The openings in the walls are spanned by pointed and segmental arches, others with horizontal arches, but mostly by round arches. On buildings in Bologna the imposts and crowns of these arches are particularly accented by acroterias (Fig. 88).

144 The windows in rich facades are still enclosed by pilasters with entablatures, free additions or gables. The enclosure of the entrance portal in particular is of the greatest richness on Bolognese buildings. (Fig. 79).

Piers, pilasters and columns, where their surfaces were kept plain and carefully coursed in contrast to the masonry of the walls, were also frequently built of shaped bricks and covered by rich ornament. Others were likewise adorned by ornamental bands and small inlaid panels, that generally were inserted in a bed of mortar after the completion of the structural work. How far iron cramps came into use has not become evident to me, but indeed was improbably carried out in the sense of the ancient practice. (Fastenings of antique tubes?). In the subdivision of wall surfaces by figures and candelabra supports, men must entirely have had recourse to these expedients for fastening them. (. Maria delle Grazie in Milan, pa-

palace facades in Cremona, Pavia etc.). The early Renaissance of Upper Italy preferred the finely membered candelabra supports instead of pilasters for their richer buildings, thereby increasing the piquant charm of the ornamentation of the facade surfaces, but thereby renounced a strong and structurally effective element. (See page 74).

To render possible greater projections for cornices, hollow bricks were also employed, but not in the mode of hollow construction of masses, as such occurs in the cut stone cornices on palaces at Florence and Siena. Strack shows this practice by an illustration of the brick cornice of Palace Pollini at Siena. (See Pl. 23, Fig. 1, and Pl. 21 therein, also our Fig. 36).

The length of the terra cotta blocks may be 14.6 to 17.4 ins., which is not very great. The depth of the bonding could not be obtained, but the hollow blocks seemed to him to not be sufficiently backed up. But beyond also these cornices of terra cotta, like the crowning stone cornices on many palaces, generally projected far the wooden rafter cornice, whereby was afforded greater projection against rain and sun. (See Fig. 85, main cornice of Palace Sforza at Imola with a projection of 2.03 ft. and that of Palace pollini with one of 1.74 ft., according to Strack). Fig. 78 gives from the same source the terminal cornice of the Chapel near Palace del Diavolo at Siena, where is shown the covering of the frieze by terra cotta plates.

On these cornices, that belong to "artistic brick architecture," the different tendency pursued than that of "ordinary brickwork," is to be recognized directly in the translated forms of preceding stone forms. But one would not desire to regard the candelabra-like vertical members on the wall piers between the windows, extending between horizontal cornices and apparently supporting belts between stories, as borrowed from a preceding stone architecture. Rather must one consider the candelabra-like supports of stone (S. Maria dei Miracoli in Brescia etc.) as an imitation of terra cotta. Filarete, Michelozzo and later Bramante in Upper Italy have cleared away these forms of Amadeo, Solari and Rodari, replacing them by strong and organically effective pilasters and half columns.

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They disappeared there, while they never won a place in Tuscany nor farther South. L. B. Alberti, Rossellino and Laurana already earlier rejected them, from their works.

The use of normal bricks for the construction of blocks, such as the ashlar architecture utilized, which then received their final art forms by a coating of stucco and mouldings run in stucco, is indeed peculiar to the latest epoch of the style, but is no sound expression of it. If ashlar with bosses were made with this brick nucleus and stucco art forms, this is an aberration (House of Giulio Romano and Palace del Te at Mantua etc.), which may frequently be excused for lack of means.

The covering of brickwork of normal bricks with stucco as a basis for an artistic ornamentation (sgraffito, fresco, overlays of variously colored terra cotta and marble slabs) has its justification, on the contrary.

The use of hollow bricks in the sense of the antique-Roman tubes or in the form of pots, as in Syrian vaults or for the dome of S. Vitale at Ravenna, are not known to me in Renaissance buildings. The extent of the domain of the use of colored glazed bricks or glazed terra cotta was limited: it was restricted to Tuscany, the Lombard-Venetian architecture has nothing of this to exhibit.

Of the series of splendid Renaissance palaces of the early time, which exhibit artistic brick architecture in a consistent manner, and in the most beautiful form with the richest development, should be particularly named here:--

- 146 1. In Ferrara:-- Palace Roverella (1502).
 Palace di Marfisa d'Este.
 Palace di Lodovico il Moro, Court.
2. In Pavia:-- Palace Bottigella.
3. In Cremona:-- Palace Stanga.
4. In Bologna:-- House Casa dei Carracci (mid. of 15 th cent).
 Palace Ghislardi, now Fava. (1488).
 House Casa Vecchietti (15 th cent.) rest. 1888.
 House Casa Gualandi (15 th century).
 Palace Fabicini, now Pallavicini (1497-1528).
 Archi del Portico S. Giacomo (1478-1481).
 Oratory dello Spirito Santo. (End of 15 cent).

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In the present study the first and most important work, that one can reasonably examine in regard to the history of the city, is the work of the late Professor J. H. Stoddard, who has given us a very valuable and complete study of the city of Rome.

In the city of Rome the first of the great works of art, which are the basis of the city, are the various Roman works of art, which are the basis of the city, and likewise in the city of Rome the first of the great works of art, which are the basis of the city, are the various Roman works of art, which are the basis of the city.

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Portal Church della Santa(1478-1480).

Palace dell Arte dei Drappieri(1496 ⁵⁰).

Note 50. See Francesco Malaguzzi Valeri. *L'Architettura a Bologna nel Rinascimento*. -- Rocco S. Gasciano. 1899).

In the places mentioned are fine and well preserved works, that one can readily examine in regard to treatment of the surfaces, relief, color, magnitude and form. Also photographs may be obtained, but which do not always give what the technician must wish to know.

In the City Museum near the Ducal court of the Castle at M Milan in the halls on the ground floor, various Lombard terra cottas are conveniently exhibited for study, and likewise in the small open rear courts of the Museum Civico at Bologna a are placed architectural terra cottas, taken from the buildings there.

For equally convenient study are the brick facades of Palace Podri in the courts and next the streets (1586, according to inscriptions), and Stanga at Cremona, with its fine and neat little caryatids and parapets in the upper story, as well as the candelabra-like supports of red terra cotta (Fig. 77). for example, what is not presented in the cities and villages of Crema, Ghilaravalle near Milan, Varese, Saronno, Brescia and Pavia in non-stuccoed and peculiar brick architecture from the middle ages and the Renaissance period!

What is not already given to us in this domain by the Sienese palaces and the public buildings of the middle ages in the places named in highly developed brick buildings? ⁵¹ No landscape, no city and no place has rejected construction with bricks or could do so, as for example as shown by Figs. 80 to 88.

Note 51. See Burckhardt. *Cicerone*. (5 th edition, p. 75). "All Siena is full of Gothic private buildings and palaces of the 14 th century; no city of Italy or of the North, neither Florence and Venice, nor Bruges and Nuremberg, is richer in this respect. One finds them of stone, of brick and mixed, as for example Palace Pubblico (1289-1301). Otherwise might be mentioned also Palace Tolomei (1205), Palace Sarceni, and as most ornamental brick architecture, Palazzo Buonsignori".

Fig. 34 shows a piece of the frieze between architrave and

cornice from the main cornice of Palace Trecchi at Cremona with the profile of the corresponding architrave and cornice. Fig. 81 gives a similar form, only that of the cornice with intermediate terra cotta slabs adorned by angels' heads. The frieze comes from the portico of the Church in Bologna dedicated to Divo Jacobo, and it is there tinted over with a light gray color, but is otherwise well preserved. The combination of the separate parts and the jointing of the same is readily recognized on the piece in the Museum. Another piece is given by Fig. 82, an arched cornice from Ferrara with small consoles, whose intervals are filled by shells; a favorite and effective motive of this time. We further add a piece of frieze (part of Fig. 83), in which the shell motive recurs, particularly interesting since on it one can see, feel and appreciate the marks of the skilfully handled modeler's tool (but not of the strokes of the stonecutter's chisel), where not the least trace exists of a coating of stucco or its vestiges. As an angle solution of value may also be exhibited in Fig. 80 a part of the arrangement of the great supporting console, which is executed with plain bricks and spanned by semicircular arches. The angle console standing at 45° is made of courses of cut stone. The arch next this is elliptical with a tunnel vault, whereby the wall arch receives a rather strange shape. Whether it could be solved otherwise is doubtful, if the diagonal console must be retained. The archivolts are of shaped bricks, which are decorated by small heads and tracery. The favorite repetitions of this and similar ornamental pieces depends on the possibility of execution by casting. Besides plane or straight surfaces are technically more difficult than ornamented to produce in a perfected manner. The workmen utilized this circumstance. The example belongs to the so-called House of Carracci in Bologna, a corner house of strikingly picturesque effect. The upper surfaces of the facades were painted and were accordingly restored, yet even these new paintings have likewise vanished. A further example, in which the jointings of the bricks are readily seen, is afforded by a portion of the cornice of the Church S. Stefano in Ferrara (Fig. 82). In any case the examples mentioned prove that for the method of ornamentation applied to brick archi-

architecture, and whose execution was not imitated in any other material, nor was this directly borrowed from any other, but rather in it ^{is} only taken into consideration the peculiarities of the material. L. Runge gives in his illustrations a also an abundance of forms in this sense and therewith the proof, that a peculiar form world exists in the Italian brick architecture of all style periods, by which the Italian architects are not shamed, and whose simple material needs not to be concealed behind stucco. On the contrary.

While in ancient Rome the ornamental parts were mostly composed of thin normal bricks, we find otherwise in Italy, that larger and specially made shaped bricks are employed in ornamented architecture. The usually very richly treated and wide enclosures of pointed windows with twisted ropes, ascending foliage, scrolls with little figures scrambling upwards etc., (see Cathedral in Monza) required a different procedure. This was adopted by the Renaissance masters, for example like Filarete with his lavishly decorated enclosures of the pointed windows on Hospital Maggiore in Milan. In a particularly beautiful way and in the style of the noblest Renaissance are preserved to us the terra cottas at the entrance portal of Church della Santa by Sperandio da Mantova (1478-1480), and also on the little and charmingly composed Oratory dello Spirito Santo, both in Bologna. Of the former, Francesco Malaguzzi Valeri says in his work previously mentioned. ⁵⁹

Note 59. L'Architettura di Bologna nel Rinascimento. Bologna. 1899. p. 78.

"All such grand ornamentation was executed by the artist with a wooden tool and in the clay while still fresh, divided in pieces so as to be burned in the kilns, the piece showing the trace of the red tint concealed at first, only increasing in tone in a time accustomed to such a vivid color.

The procedure given by Stiller for the Roman capitals of the tombs on Via Appia, appears here to have been actually followed, and it cannot be doubted for the flat pilasters.

A surface decoration by pricks of varied colors and with definite bonding patterns was not attempted by the Renaissance, since it employed such obtrusive bonds (cross, block bonds etc.) just as little as the ancients. A very beautiful e

example from the middle ages is given by the wall surfaces of Church S. Francesco at Padua (also see Gruner, Pl. 12), worked in patterns with red and yellow bricks.

In the sense of the pattern wall surfaces of Palace Doge in Venice (or of the Basilica at Vicenza) with small variously colored marble tiles, according to my knowledge such an experiment was only made on Chapel Colleoni in Bergamo -- which turned out sufficiently discouraging. Black, white and red marble tiles imitated the surfaces of cubes, that appear to project from the surface, a motive just as absurd for covering a wall as for covering a floor.

To the second species, in which the bricks are only arranged as a surface covering between belts, cornices and windows, belong as impressive examples Palace Riccardi-Manelli in Florence, Palace Farnese in Rome (this further shows traces of stucco on many places, particularly on the entire ground story, which indeed is arranged for being completely stuccoed; also see what is said on stucco in Section III), the court faaades of the Cancellaria there, as well as many of the Bolognese palaces and many others. Of buildings executed in bricks from the street level to the roof cornice are among others, House Casa dei Carracci and Palace Albergati (begun 1520), both in Bologna.

Filarete prefers in his Treatise (Book IV) for bricks the following dimensions; 6 ins. (oncio) long, 3 ins. wide and 1 1/2 ins. thick, requiring in money one farthing each. ⁵³

Note 53. Oncio = thumb = inch).

On S. Maria delle Grazie in Milan with nowise regular bonding, the bricks measure 11.0 ins. long, 4.3 to 4.7 ins. wide and 2.4 to 2.8 ins. thick, with mortar joints 0.8 in. thick. ⁵⁴

Note 54. Recapitulation of this in Section III; "Building Materials and Technical Procedures;" also something in Section XIII on Palace Architecture.

On the contrary, innovations on what was done in antiquity and the middle ages, according to these statements, are not to be indicated in this domain for the Renaissance, or only exceptionally.

66. Majolicas.

But in one case, if we neglect the flat and variously color-

colored oriental clay tiles of the Assyrians and others, they still created a novelty in the introduction of colored terracottas (majolicas) containing figures into the ornamentation of facades, in which the family of Robbia made itself immortal.

157/ Small glazed white figures on a dead blue ground in form of medallions were arranged in a regular manner in the spandrels of arcades, as shown in the most charming manner in the architecture of the facade of Hospital of Innocents in Florence. Over doorways and windows of houses, palaces and churches, we see represented in the same colors Madonna forms or smaller Biblical events, frequently bordered by realistically treated garlands of fruits in varied colors (Fig. 91), violet and yellow fruits among green leaves, angels' heads on a blue ground, garlands of fruits and flowers suspended between candelabras on the frieze (S. Maria delle Carcere in Prato), shells applied in form of tiles on the compartments of vaults (portico of Chapel Pazzi in Florence (Fig. 89) and Villa Poggio a Cajano). On protected places to these variegated majolicas 172 was added the enrichment of gilding, thus on the consecrated well in the sacristy of S. Maria Novella and on the little altar canopy in S. Apostoli at Florence, where in spite of cleaning with water and brushes, not all traces of gold have vanished. Many works in this gilding may first be correctly judged and understood.

But most wonderfully effective are the figure compositions extending like a frieze under the window sill belts, for which those executed on Hospital del Ceppo in Pisjoja, the seven works of charity and some little allegorical figures must claim the highest fame for themselves. Purely monumental and excellent in composition, they have a strikingly beautiful effect in the limited coloring. There occur then the shields of arms in medallion form, that likewise with fruit garlands are richly bordered representations of the English greeting. The plain facade built in but two stories with its deep portico resting on slender columns, the small rectangular windows above the frieze, the widely projecting and shade casting roof cornice, the dark coloring of the bricks, the light stucco surfaces of the upper story, harmonize to enhance the charm of color, and to create an ornamental piece not overloaded,

like all the monumental art of all times to this extent and in this conception has never been equaled. This single undertaking in the domain of the treatment of the facade suffices to ensure to the new art honor and eternal posthumous fame.

Jacob Burckhardt sees in these works of the Robbias instructive examples of wise restraint. The material used by them -- burnt and glazed clay -- is not concealed, but has an expression in accordance with its innate conditions. It desires to be nothing else. They compose their works of many pieces and never conceal the joints. In polychrome representations their palette is limited to the colors blue, violet, yellow and green.

Besides the use of the ordinary bricks were also executed floor tiles with falt ornament and colored decorations. In the better private houses, chapels and churches, we find everywhere still remains or even well preserved parts of such. (See Vatican at Rome, Siena, Bologna, Genoa, Venice, Florence, Pesaro, Naples etc.). The variegated enamels are mostly worn off by use, often only visible in traces. These floor tiles also are continued on the lower part of the walls in vestibules and along the ascending stairway walls. Beautiful examples of such are in Genoa. (See also Burckhardt's *Cicerone*; Renaissance Decoration. II. p. 170.). Also to the decoration of the interiors of churches and to church equipment extends this practice, in which was likewise accomplished great things, as for example on the coffered tunnel vault on the shrine of S. Miniato (Florence), on various altar enclosures in Padua and Vicenza, on the consecrated well in the sacristy of S. Maria Novella, on various altar canopies and the tabernacle in Church Annunziata at Florence. To the decorations of marble and bronze thus stand those of clay on an equal footing, and all these to the most perishable material, the wood.

67. Glazed Bricks.

The first beginning of covering the exteriors of architectural structures with variegated and glazed bricks goes back to the Assyrians, the inventors of the art of vaulting with small bricks. The portal buildings of Khorsabad (705 B. C.) give evidence of this. The ornamentation there as in the Renaissance and yet today limited itself to the animation and

the reasonable decoration of the supporting and supported parts, columns, pillars and ceilings -- the space-enclosing and space opening elements, floors, walls, doorways and windows. Have also the formal modes of expression for these in architecture been the same in all times? This question asked of a all cultured peoples may be answered with "yes." Any variations are mostly of a stylistic nature, or depend on the manner of life of a people, the climate of its country, or somewhat on the peculiarities and the existence of certain building materials. The history of the style affords information concerning this.

68. Decoration of Voussoirs.

Changes from the purely ornamental side were experienced only by the arches, strictly speaking. The oriental peoples concealed their construction and ornamented its front surface by rosettes, bands, little figures radiating from the centre, or a false jointing. (Assyrians, Arabs; Fig. 93).

157 Others formed it as a curved architrave with bordering or accompanying members and bands, decorated the members by foliage and beads; others again accented the separate voussoirs by borders with rough or smooth panels (middle ages and early Renaissance; Florentine palaces; Figs. 87, 93); the artists of Palmyra ornamented the front surfaces by flower garlands, which they recessed and enclosed by architectural members (Fig. 93); the same was done by the masters of the Renaissance in Italy, who in their brick buildings returned to the Assyrian or late Roman ways (Fig. 93). And with what abundance of rich and charming ornament did the "terra cotta makers" of the Lombard cities, well trained in sculpture, decorate the front surfaces of their doorway and window arches! The possibility of easy multiplication of a good piece of ornamentation made these terra cottas articles for export; the same model reappears in different places. In spite of the factory work, the piece continued to be esteemed, since the model had an artist as its maker (Fig. 87).

As factory work also indeed frequently were the capitals of columns made and sold in the stonecutters' shops in Upper Italy.

158 The formal mode of expression of the voussoirs has already often become an object of meditation, of experiment and of s

strife. Who has remained right? -- Men do everything today without breaking many heads!

The Assyrians and the Italians of the Renaissance, for the same building material, have found a similar form of expression for the faces of arches, indeed independently from each other. The latter have also transferred it to marble monuments (tombs), where the end arches have nothing to support.

Of interest to us is only this fact, that the earliest and latest attempts to find a definite expression coincide.

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Section VI. Decoration of Facades by Stucco, Sgraffito, Monochrome and Polychrome, Gypsum, Mosaic and Overlays.

69. Stucco Facades.

A protecting coating of lime mortar on masonry of less valuable material, or on such of doubtful appearance and constructed of irregular small pieces of different species of stone, was in use from antiquity.⁵⁵ What was required at all times and in all places for reasons of suitability, Renaissance art could also not reject; for it also knew, just as little as at the most recent time, how to create a substitute for stucco or to supplant this. Formerly and now, the means was lacking, even for grandly conceived works, for the use of monumental materials on the exterior of a building. In our days it is even again preferred as a particular expression of the so-called simplicity.

Note 55. The stucco serving among the peoples of antiquity to adorn and protect the external surfaces of walls, consisted of three coatings of lime, pozzulano and brickdust, of different thicknesses, however not over 5.3 ins. in thickness.

The masters of late medieval art and of the early Renaissance made the plain plaster surfaces a ground for an artistic method of ornamentation, that so far as durability might count, this was certain to be as durable as the stucco itself.

This decoration restricted itself at first to the execution of ornamental friezes, enclosures of window openings, to the jointings of ashlar courses, instead of which figure representations later appeared. Likewise all available wall surfaces were covered by ornaments, grotesques, medallions and figure compositions. Like a carpet extended the fine drawings between the structural parts of the facades, animating the otherwise cold wall surfaces in a harmonious way.

The mode of decoration -- Sgraffito, termed scraped painting in German -- especially flourished in Florence, the home of the Renaissance, and it is a sort of execution like a cameo,⁵⁶ a dark drawing on a light ground, where the dark under coating is first applied, black as a rule, but also in other colors (brown, green, blue or red), that was followed by one of white or yellow, on which while wet the drawing was transferred, the outlines scraped out with iron tools, then shaded

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Note 56. See ... *Distinction de l'Aménagement*, p. 251
of vol. I. ... is an imitation of the relief (heads or ?

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Note 57. For later recipes for the execution of ...

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156 with the same tools, "a drawing in fresco," for which Vasari gave the earliest recipe. The French took it up again in 1770; but it did not flourish long, until it was again introduced to us by G. Semper about the middle of the last century. It indeed found an enthusiastic reception, but this soon vanished again in our rapid time. ⁵⁷

Note 56. See Howard. Dictionnaire de l' Ameublement. p. 551 of vol. 1. Cameo is an imitation of low reliefs (heads or figures), carved from semiprecious stones.

Note 57. For later recipes for the execution of sgraffito see:-- Romberg's Zeits. f. pract. Bauk. 1875-1876. -- Also Part III, Vol. 2, Heft 1 (Div. III, Sect. 1, Chap. 4, under c) of this Handbuch, as well as Letarouilly, p. 83 of text.-- Further, reproductions by Josef Bühlmann. Handbuch der Bauformenlehre. II vol. Darmstadt. 1896. Fig. 299.

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158 In Florence are to be indicated as splendid evidences of this decoration of sgraffito on Palace Guadagni, which present the principles thereof in the simplest way; bands below the window sill belts. Squares on the wall piers between the window openings, medallions on the arch spandrels; then the best preserved sgraffitos on Palace Torrigiani, erected by Baccio d'Agnolo, with a band beneath the second window sill belt, figure compositions in rich enclosures on the wall piers, and finally most richly developed on the House (Palace Montalvi) adorned by the arms of the Medici (No. 24) in Borgo degli Albizzi, covering the wall surfaces from roof cornice to the street pavement. Naturalistic garlands of fruits, entire figures, cupids in fancifully shaped niches and frames, conventional ornaments alternate in the richest abundance. (Fig. 94). A second beautiful example on Palace Corsi (Fig. 95 ⁵⁸). Likewise in the neighboring Tuscan cities are found house facades decorated by sgraffitos, and papal Rome also made use of this procedure in an extensive and very prominently artistic manner in the grand style, as shown by the sgraffitos on the street and court facades of the most diverse houses and palaces: thus a house in Calabragia street with beautifully executed frieze and with piers, then a building in Sugarelli street with a frieze above the ashlar work, also one such in Via dei Coronari, and lastly the court facades of a

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building in Scossa cavalli street -- a complete sham architecture with columns and arches. 59

Note 58. On the technics of sgraffito, see Lange, E. and J. Bähmann. Die Anwendung des Sgraffito für Fassaden-Dekoration. Munich. 1867.

Note 59. The examples may be found in the great work with plates; Maccari, E. Rome, Graffiti e Chiaroscuri. 15 th and 16 th centuries. Pl. 8, 11, 13, 22 -- wherein the correctness of the names of the streets can now no longer be guaranteed.

70. Monochrome. *Chiaroscuro*

157 Another softer mode of decoration, in which the brush instead of the iron point again obtained its rights, is that in monochrome, figure and ornamental representations being painted in one tone, in which the same ornamental ground ideas prevail as in sgraffito, yet with the difference that there the figure compositions predominate, as shown by the example from the house in Via della Maschera d'Oro of Rome, a work of *Maturo* Fiorentino and Polidoro da Caravaggio (Fig. 96); an overrich figure band in the ground story, entire figures on the window piers of the second, and figure groups in the third story, with cartouches and trophies over the windows with the greatest architectural simplicity of the facade. With the simplest rectangular window enclosures without mouldings, caps or other accessories in relief, the artists were satisfied, in order to bring out the effect of the selected mode of decoration.

As the sgraffito was a drawing on the wet stucco ground, it then was monochrome a painting on the same with but one color in different shades.

71. Fresco Decoration.

But with monochrome (*chiaroscuro*) men were not contented in the ornamentation of facades; they found a heightening of the effect by the assistance of different colors; they resorted to fresco painting on the exterior, which even in the blessed climate of Italy was not too permanent, and the enjoyment of this ornamentation was mostly of relatively brief duration.

At first men also experimented here according to the same principle of surface decoration, that ruled in sgraffito and in monochrome. But men erred, when they went beyond this to

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imitate stone architecture. Experiments of this kind may still be recognized in Upper Italy, especially in and near Genoa, as well as in Bergamo. painted fluted colossal pilasters or columns, extending through one or more stories, with gilded bases and capitals or marbelized shafts, with cast shadows, which according to the position of the sun are all false, semicircular niches in effect with painted bronze figures in them and the like, are and remain mistakes. Painting may act in support, but it can produce no architecture, which on account of the lack of money cannot be executed in relief.

In the sense of this assistance, the early Renaissance undertook appropriate and effective works, as for example on Palace del Consiglio (Fig. 97), on the garden Palace Bocca-Trezze, on houses and palaces of Place delle Erbe in Verona, on buildings in Trient, Bergamo, Venice, Mantua etc. In many of these cases, men indeed restricted themselves to the ornamental, or merely enhanced by the addition of color the parts executed in relief, while marble capitals were gilded, the panels in relief of pilasters were gilded and the ground painted blue or slate color, the grounds of friezes being colored and the like.

In spite of some misconceptions -- and in what art development or in what style were such not to be pointed out -- to the Renaissance may be assigned without dispute the highest merit for the greatest development of facade decoration.

Important for the entire mode of ornamentation are the works of Fra Giocondo, Peruzzi, Doceno, Manturino, with many others. (See Vasari's biographies. The full title is:-- "Lives of the most distinguished Painters, Sculptors and Architects from Cimabue until the year 1567, written by Giorgio Vasari, painter and architect." Translated from Italian (into German) by Ludwig Schorn and Ernst Förster. Stuttgart and Tübingen. 1832 - 1849).

160 A model in its way remains the Palace del Consiglio at Verona, a beautiful work attributed to Fra Giocondo. At the middle of the sixties of the last century the paintings were greatly faded, and they were again correctly and skilfully restored in effect, but permanently in coloring, so that they now again have the appearance of the time of 1866. (See part-

partial elevation of Palace del Consiglio at Verona (Fig. 97).

Painted facades were still about 1550 characteristic of the appearance of many cities of Upper Italy, as for example of Genoa, where Perin del Vaga was its most effective representative. The ornament there recedes, contrary to the correct conception of Fra Giocondo. The representation of colossal heroic and allegorical figures, portraits of famous men, and the glorifying of the great deeds of the republic took its place. The entire facade of Villa Franzone in S. Francesco d'Albano (see Reinhardt's Genoa, pl. 39), with exception of the portal with its balcony and a flat belt course, is smoothly stuccoed and then furnished with a painted stone architecture with fluted pilasters and figures placed before them, everything being calculated for a distant effect. Even the balustrades are painted! Palace Pallavicini⁶⁰ (Pl. 76) exhibits colossal figures painted in flat niches, but which indeed belong to a somewhat later time, and are not suited to the design of Alessi. Palace Spinola (Pl. 60) shows, limited to panels and divisions of the frieze, a representation of the deeds of the ancestors of Doria, painted in fresco in 1534 by Lazzaro Galvi.

Note 60. See Reinhardt, R. Palastarchitektur von Oberitalien und Toscana from 15th to 17th centuries. Berlin. 1886.

In Florence Posseti is the leading master. Well preserved are the facades of houses of Place S. Croce by Giovanni da San Giovanni and others on Place di Madonna Aldobrandini.

In Venice is to be mentioned the facade of the Fondaco de' Tedeschi, that was entirely painted by Titian and his pupils. Likewise the great Mantegna occupied himself with painting facades. Such in the grand style in Padua and also on palaces on Place d'Erbe in Verona are yet to be mentioned, distinguished by the number and worth of the works. Others are to be named in Brescia, Bergamo, Vicenza (also on the buildings of Palladio), Udine, Treviso (on Place dei Cavallieri) and Trient, with its varied house facades on the beautiful and picturesque marketplace. In Bergamo one house is noteworthy (Via dell'Arena), which exhibits on the ground story ashlar work painted in gray on gray, on the two upper stories being painted niches with yellow figures, enclosed by variegated

painted columns. Some of the niches have painted architectural views.

Almore intimate, but artistically more valuable part is played by the painted mural decorations in the interiors of residences and public buildings of the 16th and 17th centuries. A confusion of plant, animal and human forms with shields, vases, masks, cartouches, little panels and entirely framed pictures, which are then chiefly painted on a light ground. Particularly beautiful examples in Palace Vecchio and in the Uffizi at Florence (Poccetti), in Mantua in Palace del Te and in Palace Imperiale etc. The most prominent are in the Loggias of the Vatican (Giovanni da Udine). On the latter J. Burckhardt pertinently remarks:-- "That their worth does not exclusively rest on the richness of the compositions, but rather in the legitimate richness is their essential quality." The same is true for the mural and ceiling decoration of Villa Madama near Rome.

72. Architectural Stucco Work.

After 1600 this mode of decoration died out. In its place appeared architectural stucco work, colored or uncolored, in part also accented by gilding.

A combination of stucco and painting is shown by Palace degli Imperiali at Genoa, built in 1560.

Men required increased alternation of light and shade, especially for a light colored building material.

/62 Stucco needed finer ingredients, and marble dust was mixed with it. When it had attained a certain consistency, it was carved and shaped like clay. Medallions, figures, historical events, festoons and arabesques were represented, when the enclosing mouldings were often covered with wax and polished, /63 or were tinted in color on the surface, just as today, only usually with less care. Men were also satisfied sometimes by a limewash. Oil painting was not in use. In spite of all injuries by weathering, stuccoed facades have lasted for centuries, both on this side and beyond the Alps. Examples of the grand style are the street and court facades of Palace Spada (Fig. 98), the vestibule of Palace Farnese, the facades and vestibule of Palace Massimi in Rome. (See Letarouilly, *Les Edifices de Rome Moderne*, and Fig. 99). The stucco ornament-

ornamentation on Palace Spada here mentioned is the work of a pupil of Daniele da Volterra-Mazzani. The panels enclosed by stucco in the upper story were painted in various colors with representations of figures. The vestiges still recognizable are in the court. (1912).

The ground story of the street facade is merely divided in rectangles (ashlars), in the succeeding stories alternating with figure niches ~~and~~ with plain rectangular windows, above being round medallions with square mezzanine windows. The wall surfaces are bordered by window sill belts, and are adorned by cupids, half figures and statues, festoons and draperies, in the uppermost story inscribed tablets alternating with the low windows. Letarouilly finds the ornamental accessories too coarse and overloaded in comparison with the cornices and window enclosures. May be. More tasteful is the effect of the stucco ornamentation in the court, which rises above an airy series of piers connected by round arches. At one place the figure niches appearing on the street facade are replaced by free figures standing on consoles, naked forms of men holding shields of arms. The parapet frieze is ornamented by little figures, the medallions are omitted and are replaced by festoons with little soaring figures. A second parapet frieze over the upper window sill belt exhibits tritons and sea monsters; instead of the inscribed tablets are figure reliefs within the enclosures, and beneath the main cornice are inserted scroll ornaments (Fig. 98). A charming example for facade stuccos is given by the Papal Villa Pia near the Vatican, erected after the plans of Pirro Ligorio, equipped and completed by the aid of different artists of high repute.

In Mantua were the buildings of Giulio Romano; the Palace del Te with its massive hermes-caryatids are to be named, on which also the rusticated ashlar, which look like blown up wet cloths, are constructed of brick projections covered with stucco !. Accordingly also the garden facade of Villa Medici in Rome, much adorned by antique reliefs, must be mentioned here.

Extensive stucco decorations over great surfaces are to be indicated on the Genoese palaces and villa facades of nobles.

Thus for example on Palace Raggio (built 1563; see Reinhardt's *Genoa*, pl. 51), that of Marcello Spargo with stucco ornamentation distributed over the entire facade and applied with masterly skill. Hermes-pilasters, arms, fruit garlands and cartouches alternate with each other.

In Vicenza we are astonished by the richly stuccoed facade of the Municipio of Palladio, mostly applied on brick walls, and likewise at Ferrara the decorations on Palace Bentivoglio.

One of the most charming creations in this domain, joined with artistic severity and well arranged distribution of the ornament, must be the street facade of the so-called House Casa Borrani, formerly Palace Serodino in Ascona on Lake Maggiore.

This is a three story house with three windows in width, situated on a small Place, with buildings attached at right and left, with an unimportant plan (Fig. 109 in the source mentioned) and a plain internal architecture. The inscription over the front entrance says:-- "Christopher Serodino, restored and enlarged by his son John Baptist in the year 1620."

The stucco surfaces of the facade are characterized as ashlar work by lightly incised lines. Inclusive of the holder of arms, the entire figure and architectural decoration here, as well as the crowning cornice, is made of stucco. Until the year 1880 the facade remained without injury, even the original windows with their glass roundels set in lead were there. A powder explosion in the vicinity injured a portion of the stuccos. In the erection of the building, owner and architect were united in one person. "To adorn his own house gave him unlimited freedom of treatment and cheerful freshness." The composition also already inclines to the Barocco, yet a clear simplicity is still expressed in it.

The length of the facade amounts to 37.0 ft.; it is terminated at right and left by a series of granite ashlar in the ground story, by Ionic pilasters in the second story, and by plain pilasters in the third, around which are broken the main cornice (Fig. 100).

The separation of the stories is made by window sill and story belts, which enclose two bands. The lower one is decorated by fruit garlands and rich scroll ornament with little

half figures, the upper one by representations from Biblical history; the fall of man into sin, expulsion from Paradise, story of David and the beautiful Bathsheba, with his reprimand by the prophet Nathan.⁶¹ (Fig. 100). The life size figures on the window caps are wrought in the round, and represent Adam and Eve on the left, on the right being King David and Bathsheba. Charming is inserted between the two figure groups the Madonna with the Christ Child in the niche, flanked by two angel figures. Architecture and sculpture here work together in the most beautiful way, such as the Italian Renaissance scarcely again understood in another case on a house facade (Fig. 101). Dominating in the middle, Christendom is embodied in its Madonna worship, the accessories from the Old Testament of a more material nature, and selected subjects for the sculptor's work serve as additions.

Note 61. See Rohn, J. R. Mitt. d. Schweiz. Gesell. f. Eth. Hist. Denkm. VII. With photoprints by J. B. Obernetter in Munich.

The antique preferred the unornamented surfaces of the exteriors of its buildings (cell walls of temples); the highest allowed then by it in ornamentation was the sculptured frieze (cell wall of the Parthenon), or strictly architectural subdivisions by cornices and vertically by pilasters, columns, doorway and window enclosures, or also niches.

The middle ages and the Renaissance extended architectural ornamentation and decorated the space-enclosing rigid masses of the external walls. (Blind tracery of mediaeval facade surfaces, useless subdivision of the wall surfaces by flat pilasters in the Renaissance).

The surface ornament was a need for these.

Today the plain surface has again become proclaimed as the only correct one, without reflecting much thereon, why it became a necessity for the natives of the old world. Fashion indeed knows how to get out of this!

By Italy were influenced the facades covered with stucco on this side of the Alps, wherein the pupils frequently exceeded their instructors. (Innsbruck, Munich, Säckingen, Würzburg etc).

73. Mosaic Decorations on Facades and for Internal Architecture.

The execution of colored decorations of facades in indestructible materials led to the use of mosaic, made of small cubes of colored marble, terra cotta, paste or glass. As floors, on walls and ceilings, we find mosaic work already on Roman buildings; on Byzantine it attained high perfection (Constantinople and Ravenna); mediaeval art in Italy, but especially Early Christian, made extensive use of it, as shown by parts of the Cathedral at Orvieto, many earlier church buildings in Rome, Venice and Florence, S. Maria Maggiore (1300) and S. Lorenzo-f-l-M in Rome (architrave with mosaics), S. Miniato in Florence, S. Marco in Venice, where the Renaissance also spoke a word on the main facade (1600), the Cathedral in Civita Castellana and others.

As an external decoration, mosaic plays no part in the Renaissance; as an ornament for internal walls and ceilings it shows itself so energetic in the Cathedral of S. Peter until the most recent time, free, sound and in places better than in the first period of its bloom in the Byzantine empire, where it suffered from the stiffness of the drawing, but exists unexcelled in splendor and harmony of color.

In the imitation of famous oil paintings with the smallest bits of stone, most finely graduated in colors, which gleam on the walls of S. Peter, this art goes almost too far, but is here not without models, such as shown by the famous antique mosaic of the Capitoline doves.

74. Incrustations.

A last step in monumental decoration of facades is to be sought in the "incrustations" with variegated stone slabs of the nobler kind, behind which is concealed the massive and less valuable building material. The Protorenaissance in Florence (S. minato, Badia, Baptistery) early executed this, based on antique models. First the Venetian architects alone undertook in this the best and most splendid works, as well as those most reasonable in the coloring and selection of beautifully veined marble plates, that they knew how to skilfully contrast, as shown by the Northern facade of the court of the giants' stairway in Palace Doge, the external elevation of the facade in the forecourt of School Ss. Giovanni e Paolo, the main facade of the School S. Marco (1435) with its peculiar

representations in perspective by different marble inlays, portions of the facade of S. Maria dei Miracoli and of S. Zaccaria -- all in Venice. This art of creating a precious exterior with cheap materials, which produces a distinguished and truly beautiful impression, and that is now well preserved for 400 years, is again a merit of the Italian Renaissance, certainly here not without models from the antique. (Fig. 103).

Likewise in the internal decoration, incrustation plays one of the highest parts, if one sees, what the Renaissance has produced in the great Chapel Medici at Florence and in the stairway of the Palace at Caserta.

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Section VII. Wooden Architecture.

"Of a real Italian external wooden architecture in the sense of the Northern structures of wood, mention cannot be made, although in Italy certain combinations of wood occur, mostly in connection with structures, in which the antique traditions may again be recognized.

Semper. *Der Stil*. p. 317 et seq.

75. Wooden Architecture.

The peasants' houses of the Italian Tyrol on the slopes of the Alps mostly have only in the gable of the roof story a decorated wooden structure, while the living story beneath this is solidly built of stone, but just this structure and its galleries bear reminiscences of a preceding antique-like wooden architecture; they show us a renunciation of half timber construction from the ground in a very definitely expressed manner. It is probable and possible, that the stone substructure was preceded by one with a walled-in timber structure at the time, when a greater supply of wood was yet available in the Alpine regions; but its existence in the last thousand years can scarcely be proved. (Starting point in Bergamo.

76. Colony Houses in 13 th and 14 th Centuries at Bologna.

Besides wood, stone also obtruded itself as a building material on the inhabitants; in the boulders and blocks from the mountain slopes it was presented to the common people already prepared in a certain sense, so that men already at an earlier time employed the mixed method of building. Thereby men were compelled to protect by projecting wooden roofs the not always well built stone masonry, but which still offered great resistance to wind and weather, by which men also obtained passages and store places around the house and protected from sun, rain and snow.

Where elsewhere similar primitive conditions were created by nature, we see allied procedures in construction. In the Bocche di Cattaro and in entire Montenegro the treeless Karst mountains only afford stones; forests and fruitful fields are thinly scattered, wherefore the inhabitants also early adopted stone construction for their huts, only employing the cost-

costly wood and straw for covering materials. Stone houses with roofs of wood and straw are thus no architectural peculiarity. The ancient culture land of Italy, never depopulated, but so much the more exposed to the storms of war and the invasions of the barbarians, who destroyed its forests, and whose opportune reforestation was prevented by the unquiet times, was indeed already early to proceed economically with what existed. Already for this reason appears to be excluded the development of a wooden architecture, such as the North, rich in woods, can exhibit. (Germany, France, England, Scandinavia and Russia).

- 177/ If we ask the archives for information, where none is given by the raility, these answer at least by drawings. Such from 172 the Italian state archives (*Disegno dell' Archivio di Stato*) show us what appearance the peasants' houses (colony houses) had near Bologna in the 15 th and 16 th centuries. We likewise see in this early time of the Renaissance only stone buildings with roofs having a framework of wood and covered by tiles, but no artistically framed timbers on the exterior. 62
- 178 Compare in this sense also the two peasants' houses in Figs. 106 and 107 from S. Gemignano and Porrena of the earlier time.

Note 62. Reproduced from Mologuzzi Voleri, *F. L'Architettura di Bologna nel Rinascimento*. Bologna. 1899. p. 149 and Figs. 104, 105.

77. Cornice with wooden Rafters.

- In the cities for mediaeval and early Renaissance buildings, cornices with consoles and battlements form the upper terminations of the structures, and only when these failed, the strongly projecting antique cantilever cornice with overhanging rafters entered into its ancient rights again. Only this portion of the wooden construction could become the object of artistic treatment, and to this the Italian Renaissance restricted itself, since it could not consider wooden construction artistically and did not desire to do so, with low superposed half timber walls of wooden posts, beams and purlins, as well as the play of S. Andrew's crosses, struts and curved g 174 girts between them, completed by thin panels. This is and remains a peasants' fashion, even if an undisputed charm lies in it, that later continued even in cities.

The following is a list of the names of the persons who have been mentioned in the text of this report.

plan also, the presence of a small amount of water in the soil, of which the soil consists of the so-called "silt" (by the way, the "silt" is a very fine material, and is not to be confused with the "silt" of the same name, which is a very coarse material). The water is not only present in the soil, but also in the air, and in the water itself. The water is not only present in the soil, but also in the air, and in the water itself.

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Water, 1908.

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The termination of the facade walls by a wooden cornice produced by the roof construction was known to the Early Christian style, the Protorenaissance and then to the transition style, of which the roof construction of the so-called Bigallo in Florence (by Orcagna, 1380 ?) affords one of the most charming examples (Fig. 108 ⁶³), and finally extended into the high Renaissance, many Pisan and Florentine palaces giving evidence thereof. (Fig. 109; rafter cornice of the Uffizi in Florence). Massive wooden main cornices, adorned and supported by richly carved consoles with great projections of 6.6 ft. are shown by palaces in Trient and a court structure in the Castle there (Fig. 110). Others are reproduced in paintings with views of cities from the 15th and 16th centuries. The rafter cornices in Trient recall in their formal development those published by Gladbach in his Abb. B. S. VI 2.

Note. ⁶³ Gladbach, E. Vorlegeblätter zur Bauconstructionslehre. Zurich. 1868.

In a beautifully characteristic manner is executed a pure wooden construction, a hood over the entrance doorway at the Cathedral in Pisa, that particularly shows how the good time of the Renaissance allowed to prevail in these works, what pertained to sound construction and form, good taste and a sense of beauty (Fig. 111). As further examples, executed with like constructive skill with beautiful and characteristic forms, may be mentioned the balcony opposite the portico of the Mercato Nuovo adorned by the arms of the Medici, and further the charming wooden cornice supported by stone columns in the upper stories of the cloister courts of S. Lorenzo, S. Croce, the Badia etc. in Florence (Fig. 112), and finally the massive and well carved wooden cornice of the Uffizi, of Palace Guadagni and of many other buildings in Florence and Pisa (Figs. 113, 114).

A view of simple wooden cornices with wooden cantilevers under the rafters is given in Fig. 115. (Palaces Antinori and Quaratesi in Florence).

How the Renaissance in Italy proceeded in the arrangement of wooden protecting roofs over driveways in enclosure walls, is shown by a gateway erected near the Certosa of Florence, in its arrangement recalling the example of the antique hood of Paboli, specifications for which have remained

176 of Puteoli, specifications for which have remained to us.

Of a slightly projecting wooden cornice on a peasant's house in Maggiatale, more notable by its peculiar construction and the mode of covering the roof, than by its artistic form, a representation is given by Fig. 116, and by Fig. 117 the arrangement of the brackets in the gable of a chapel at Cevio.

Instead of the wooden cornices exhibiting the construction, there also now appeared those, which concealed this behind a great cavetto, as constructed on the Palace at Gubbio (Fig.

118). A variation translated into stone is shown by the court facade of Palace della Pilota in Parma (Fig. 119), and in most ornamental treatment by the gateway of the bridge gate of the Certosa near Pavia, where lunettes with pointed compartments intersect the cavetto, whose surfaces are covered by paintings (Fig. 120).

A wooden cornice of the simplest kind is shown by the roof of the wooden Bridge over the Ticino near Pavia (Fig. 121), and after the same idea by the open framework of the roof of the loggia of the City Hall in Siena, but in somewhat richer treatment, than that illustrated by Gladbach in his Pl. 9.

Section VIII. Masonry Vaults and Wooden Ceilings in the Form of Vaults.

78. Vaults.

Plain horizontal ceilings of wooden and stone beams, or produced by timbers crossing each other at right angles, or the so-called coffered ceilings cut in stone slabs, of moderate and wide spans, vaulted ceilings over all possible forms of plan, placed at any preferred height and with the most varied treatment, constructed of ashlar with and without mortar, of bricks, of concrete or built of these materials combined together, massive ceilings of iron and terra cotta (Vitruvius), ceilings in vaulted form of lattices of cypress covered by stucco (Vitruvius), were known to antiquity, and the middle ages, but where the latter did not create a new conception of the vault in construction, whose principles were not already known to the Romans and Byzantines, or actually executed by them. ⁶⁴ Alone remains excepted the late Gothic netted vaults, in which the ribs are arranged beneath the continuous surfaces of the vault, and frequently only detached from these as a decorative accessory. On the netted vaults of the minster in the Reichenau spaces of 7.9 to 11.8 ins. between the ribs and vault surfaces appeared.

Note 64. See the works of A. Choisy, excellent in respect to history and technics; *L'Art de Bâtir chez les Romains*, and *L'Art de Bâtir chez les Byzantines* (Paris, 1883), as well as by the same author; *Histoire de l'Architecture* (vols. 1 and 2, Paris, 1889), with its peculiar and interestingly represented drawings, also *L'Art de Bâtir chez les Égyptiens*. Paris. 1904.

The Renaissance took something from all; but the best instruction was derived from the East Roman empire of domes on pendentives; the most far-reaching acquisitions of these greatest technicians of the old world. They combined those domes with other forms of vaults into new constructions (S. Giustina in Padua, Fig. 122), erected the cylindrical drum for admitting light and adorned by columns, on the pendentives, placing first thereon the elevated hemispherical or raised dome, which they crowned by a lantern (Fig. 123), arrangements which the Byzantines only solved at a small scale, so far

as can be seen from existing monuments.

79. Compartment Vaults.

The compartment, umbrella or melon vaults (Chapel Pazzi, Fig. 124; sacristy of S. Spirito over an octagonal room, Fig. 125; S. Maria delle Carceri in Prato; sacristy of S. Lorenzo at Florence, Fig. 126) are to be referred to Byzantine influences.

For the antique domes the vault and roof were one; what was assumed in the interior was also determined for the exterior; in the form once chosen, nothing could be changed; then for static reasons the vault was made in part invisible externally, i.e., was concealed by vertically ascending masonry. In connection with these exceptions from the rule the Protorenaissance proceeded with the Florentine Baptistery, and the architects of Upper Italy later followed the same ground idea, but went still farther in so far, that they allowed the vault to disappear externally under a pyramidal or conical roof. (Figs. 127, 128; plan and section of the Baptistery in Florence). This solution is opposed to another, in which the wall extended upward is changed into an arcade, from which little vaults rest on the visibly projecting external surfaces of the dome, corresponding to the arched openings, thus producing a charmingly beautiful motive. (See Plate II with the apsidal dome of the Certosa near Pavia).

The first great act of the Renaissance in constructive respects based on the preliminary step mentioned at the Baptistery in Florence, was the first construction of a double dome, or a dome with two shells over an octagonal interior (Fig. 129), in which the form of the external shell of the dome did not differ much in outline from the internal one. "Make over this another dome, to protect the inner one from dampness, and because it appears so much more magnificent and of greater curvature in shape" (i.e. more swelling in form) ⁸⁵ says master Filippo in his specifications. A practical and an ^{inner} aesthetic purpose, to protect the dome from water, and to give it a more imposing appearance externally, was what impelled to the construction of this kind of dome, but also the impossibility of erecting a solid dome in the given thickness of the substructure without stepping back the external walls. A

182 An arrangement as on the Pantheon with the use of a thickness of the vault less than that of the supporting walls, with an equilibrating stepping at the base of the dome, certainly would not have produced a happy appearance.

Note 65. Durm, J. *Zwei Grosskonstruktionen der italienischen Renaissance*. Berlin. 1887 and 1902.

New and ingenious is and remains the idea, but its technical execution must appear less original with reference to the preceding construction of the dome of the Baptistery, especially if one considers that there already the loading of the vertex by a lantern was already executed. (Fig. 127). But there remains antique the purpose to allow the dome itself to appear as a form of roof.

183 The two shells of the dome are of unequal thickness, the external protecting dome being only $1/3$ as thick as the internal dome, and they are connected together by eight angle arches (Fig. 130), whose ridges project and are externally visible, as well as by two strengthening or intermediate ribs in each of the eight compartments of the cloister vault, whereby the shells are stiffened better and become more stable. Upward the ribs are joined by 9 arches (Figs. 130, 131), while the angle arches are again connected by a heavy wooden ring, held together by iron bands at the junctions, and which indeed should prevent any deformation of the dome. A similar wooden ring was also already inserted at the Baptistery, but was placed higher there; also for that the dome was built of split stones and not of bricks, as for the latter dome.

A further strengthening of both shells is formed by the two massive galleries, the upper one being constructed of stone beams with stone slabs laid thereon. Whether any special bonding was followed in the internal dome over 6.6 ft. thick is difficult to say in general, with the layer of plaster on the external and internal sides; yet the wooden moulds for the bricks, still preserved in the Cathedral shops, show that besides the normal bricks different kinds and sizes came into use, and accordingly it may still be assumed, that binders were employed at the angles (groins), which fastened both the two adjoining vault surfaces together. Then it must still be stated, that the brick masonry, particularly in the corbels

and ribs is properly bonded with Macigno (sandstone) ashlar.

In the great work mentioned below ⁶⁶ is given the "scheme of the pointed arch (i.e. of the strengthening arches from the angle ribs to the intermediate ribs next adjacent) at the vertex," and the "scheme of the stepped toothing," and there-with it is explained, that the two illustrations, from which those in Figs. 132 a, b, are reproduced, show the scheme for building the pointed arches and the vault surfaces of the external and internal domes. It is further stated:-- the beds of the vault radiate from the centre of the corresponding arch, but the separate courses of masonry are not horizontal but in a stepped bonding, or as men are accustomed to say, b are built in zigzag or herringbone courses. (*Opus spicatum*), or as Fontana expresses himself in describing the vaulting of s. Peter, "in herringbone form." For this procedure are employed two shapes of bricks, and in the last mentioned are indeed meant those given by Brunellesco in his building specifications, a view that is not exactly general. I understand by this the hook-shaped bricks, for which the models are still preserved. Other matters also developed in the said work, I fail to understand, and in view of the circumstance, that the two shells of the dome are still intact, plastered, painted and covered by tiles, I might in general dispute the possibility of giving a final decision on the positions of the bricks on the whole.

Note 66. Stegmann, C. von. *Die Architecture der Renaissance in Toscana etc.* Munich. 1896. (p. 44 of text, Figs. 7, 8).

Instead of this very doubtful statement, according to which herringbone masonry alternates with ordinary in an unpromising way, and where stone binders are inserted between both, C. Choisy makes a different statement in his "*Histoire de l'Architecture*," ⁶⁷ when he writes:-- the dome is relatively light; by the mode of connecting the two shells was secured almost the strength of a solid one; its material is concentrated where effective; the selected form favors in an increased way the erection on a supporting framework without sheathing. One notices an unusual coursing of the voussoirs, which facilitates the execution without centering, when the otherwise conically lying bricks are mixed with those in spiral courses,

(Figs. 132 a, b), that extend through both shells and the ribs. How Choisy thinks the work was executed is shown by the illustrations given after him. Herringbone and spiral coursing of the voussoirs will be recognized and fixed there !

Note 67. Choisy. Histoire de l'Architecture. Vol. 2. p. 616, 617.

The instructions of Brunellesco for the erection of the Cathedral dome have experienced some editorial changes, which however present no changed points of view for what is of value for us technically. I allow them to follow here. The edited places are underlined (in the original text; see German text. p. 186)

"9. First of all the inner dome is so shaped on the inside, that the angles are turned in the proportion of a sharp fifth. It is 7.2 ft. thick at the springing and continues in the form of a pyramid to the eye above, where it measures 4.8 ft. in thickness.

2. Another dome is built above and outside this to protect it from water, more grandly and splendidly curved, 2.9 ft. thick at the base; it continues in the form of a pyramid as far as the eye above, where it is to be 1.3 ft. thick.

3. The space between one dome and the other is 3.8 ft. at the base, and in this space are to be the stairs for ascending between the domes; this space is to be 4.5 ft. at the eye above.

4. Make 24 ribs, 8 at the angles and 16 on the sides; each angle rib is 13.4 ft. on the outside; on each side are 2 ribs, each measuring 7.7 ft. at the base, which join together the two domes, and are built in the form of a pyramid up to the eye, their dimensions being equal.

5. The 24 ribs with the domes are girdled by 6 rings of large and heavy stones, well cramped with iron; above the stones are iron chains, which encircle the domes with their ribs. The base is at the springing 10 ft., changes and follows the ribs.

6. The first and second rings are 5.8 ft. high; but the first ring is further strengthened below by long stones as headers, so that both domes rest on these stones.

7. At the height of every 123.0 ft. between the domes are

small tunnel vaults between the ribs, forming a passage to the domes, and below the small arches between the ribs are large oaken tie-beams, fastened to the ribs by iron chams.

8. The ribs are built of stone with heavy stone supports, indeed the exteriors of the domes contain strong stones, that are fastened to the ribs up to the height of 46.0 ft., and then above they will be built of soft or spongy stone, of course taking into consideration the purpose for which it is to be used, but of a lighter material than hard stone.

9. A passage might be made outside above the 8 round windows with a pierced parapet 3.8 ft. high; or indeed two passages, one above the other above a well ornamented cornice, the upper passage being left plain.

10. The water from the dome falls into a marble gutter 0.64 ft. wide, and it may then run into certain spouts of strong stone set beneath the gutter.

11. There may be made 8 marble heads on the angles on the external surface of the dome, as large as may be required and 1.9 ft. high above the dome, with caps and measuring 3.8 ft. high, and 1.9 ft. from the ~~top~~ to the gutter of every part, being built in the form of a pyramid from base to top.

12. Build the domes in the manner described above with no other covering and with the maximum size of 57.5 ft.; but with internal connecting bridges in whatever way will be advised and thought best by the masters, who are to build them; it may then be made more than 57.5 ft. if desired, as experience in building will show the best plan to follow." ⁶⁸

Note 68. Extract from Repertorium der Kunstwissenschaft. V Vol. 21 (1898), Heft 4, p. 259-261. -- German translation is to be found in Durm's *Zwei Grosskonstruktionen der italienischen Renaissance*. Berlin. 1887.

169 Cracks in the surfaces of the vaults have also appeared here in time, for which men desire as a cause to take into consideration the various earthquakes in Florence.

81. Dome of S. Peter in Rome.

If peculiarities here show themselves in the conception and particularly in the details of the construction, that moreover as shown by the statements of the instruction for the building, did not spring complete at one gush from Brunellesco's

the second great construction, that the dome of S. Peter in rome, only an advance in form but not in technical respects, in spite of its origin more than 100 years later.

The dome rises above an octagonal substructure with sides of unequal length, by which arrangement a portion of the pendentives is supported still by the vertical masonry, the latter are turned between four mighty piers, connected together by round arches, and prepare for receiving the circular drum, on which likewise rests the circular dome (Fig. 133). The arches are thus entirely free and not, as at S. Sophia, filled on two sides by arcades and walls; the pendentives form true spherical triangles. As in the Church S. Sophia in Constantinople, the dome is divided into supporting ribs and compartments extending between them according to the true Roman principle; but it is constructed in two shells after the precedent in Florence (Fig. 134).

Originally designed to be accurately hemispherical in the interior, this form was abandoned in the execution, and for structural reasons was constructed in pointed arched form as externally, but the two shells do not show their courses parallel to each other, the outer one being made rather steeper than the inner. The static reason for the form of the curve by the arrangement of the lantern and the loading of the apex of the vault was the same as in Florence. In the great wooden model of Michelangelo the different vaults are represented above each other; the innermost one was omitted in the execution. (See Fig. 134 and the detailed statements on the history and the mode of construction in the author's work mentioned in Note 65. ⁶⁹)

Note 69. See the author's work (pl. IV), where also the separations after the construction are indicated. Then the

statements on page 76 et seq.

The supporting ribs extend through both shells and project from them internally and externally, they receive the load of the masonry of the vault extending between them and executed in "herringbone form" (Fig. 132 c). Michelangelo already gave in his model iron ties both in the drum, as well as also strong iron rings in the dome itself. The rings were increased at a later time, since the original ones were ruptured, so that

so that now 5 iron bands in all may be counted, placed around it in the years 1743, 1744 and 1748. The external surfaces of the protecting dome are covered with lead, the inside of the inner dome is adorned by costly mosaics. Both domes are constructed as one from the springing for a third of their heights, there separating into an external thinner and an internal thicker shell.

32. S. Maria da Carignano in Genoa.

This work of the great Florentine experienced an imitation in the Church S. Maria da Carignano in Genoa by the perugian Gian Galeazzo Alessi, where however the hemisphere was retained in the interior, while the protecting dome is somewhat pointed. Both domes begin to separate at the springing, and each is constructed of bricks; above a great opening at the vertex, they support a correspondingly large lantern.

The execution of the two domes differs. The inner one is a Roman coffered dome, the external one being entirely without ribs and built without any connection with the former, if one does not regard as stiffening the dome the vaulted double spiral stairway, that ascends between the shells to the lantern and then again descends to the internal main cornice. (See Fig. 135 and the larger illustration of this dome construction in the journal mentioned below.⁷⁰ Without order are arranged connecting arches here and there in the space between the two shells; nothing is to be seen of any bonding with iron. Of later consequences is only to be indicated a great crack extending from the vertex to one of the supporting piers. The external protecting dome is covered by semicircular slates set in mortar, the internal dome with coffers is plastered and tinted white.

70. Zeits. f. Bauw. 1902. p. 162-172. pls. 5, 67.

33. S. Maria dell' Umilta in Pistoja.

Another example of a great double dome in the sense of the Florentine is that begun by Vittono Vittoni, and completed by Vasari for S. Maria dell' Umilta in Pistoja. Here the hemispherical form is employed for the interior and the exterior; the supporting ribs at the angles reappear, also the cantilevers appear in a rather stumpy manner; the vertex load of the brick vault by a lantern is to be seen; the eight outer ridges are white.

comprehension of modern theosophy, and the knowledge of a
 world not externally covered by the real things, that as it
 is known.

It may have been the vanity, and which vanity "for the
 sake of God and for his own sake" was so often with the
 theosophy and so. The whole tendency is clearly without
 question, even very strongly expressed in the sense and
 after extended, but is not a very strong force for the sense-
 of vanity, that also found in an important way, so
 that the theosophy only admitted that it was to remove it.
 But the fact is that the theosophy is with the sense, appli-
 ed to the sense and to the sense in five rows above each
 is, after the loss of nearly 400 years, theosophy the
 sky line of the city. (See fig. 188 and the meaning of the
 sense mentioned in 1888).

It is not possible to do this. When there are
 theosophy and other theosophical subjects; for I know of
 no person or other similar person in theosophy,
 that does not have such subjects. Whether the theosophy is
 really in the sense in the sense of the sense
 and the sense from them. The reason for this is that
 the theosophy, not only is a theosophy, but also
 theosophy, that the sense of the sense is a theosophy
 in the sense, on the other hand, the sense of the sense
 is theosophy. The theosophy is the sense of the sense.

3. Improvement of the theosophy.

But again the theosophy is the sense of the sense and the
 theosophy the theosophy and theosophy the sense of the sense
 theosophy, that the sense of the sense is theosophy on the
 theosophy.

The motive of 3. Part of a small sense we find theosophy
 theosophy as the sense of the sense of 3. Part of the sense
 in the sense (187), and a theosophy theosophy in the sense of
 theosophy theosophy theosophy is the sense of the sense of
 theosophy (187).

constructed of moulded cut ashlar, and the surfaced of the vault are externally covered by flat red tiles, just as in Florence.

Misfortune attended this building, that the first architect must have left without vaults, and which Vasari "for the honor of God and for his own fame" was to finish with the dome and actually did so. The stone lantern is pretty without question, even very prettily designed in size and form, and also executed, but is too heavy a vertex load for the selected form of vaulting, that also acted in an injurious way, so that the Ristojese city architect Lafri desired to remove it. But men were satisfied by enclosing it with iron bars, applied to the outer surface of the dome in five rows above each other and visible, and excepting a few cracks, it still stands today after the lapse of nearly 400 years, dominating the sky line of the city. (See Fig. 136 and the treatise by the author mentioned in Note 65.

191 Men have desired to deduce from these occurrences the Renaissance masters to be bad constructors. Then there are also the architects in other architectural styles; for I know of no greater or even smaller vaulted structure in architecture, that does not have such defects. Neither the mediaeval cathedrals in Italy nor those in Germany from Basle to the lower Rhine are free from them. The reasons for these results may be determined, but not always avoided, particularly when one considers, that the vault on the one hand may rest on masonry in mortar, on the other on monoliths or coursed ashlar with few joints. De Saulcy quotes in his book on Jerusalem an Arab proverb:-- "The arch never sleeps"!

84. Improvement of the Pendentive.

Peculiar again are the different ways of improving and decorating the pendentives and adjoining arches for such domical vaults, that are raised on a drum or are set directly on the pendentives.

The motive of S. Peter at a small scale we find transferred in a charming way to the Chapel Chigi in S. Maria del Popolo in Rome (Fig. 137), and a simplest solution in the same church, where the spherical triangle is inlaid with variegated marble slabs (Fig. 138); another simple one is in the Chapel

of Pope Clement in the Lateran, where stucco figures fill the pendentives (Fig. 139), and again two others, splendidly suited to the proportions, in S. Maria Maggiore with hermes figures supporting medallions, or with free angel forms, that stand on the impost cornice before the beginning of the pendentives (Figs. 140, 141). And again is a further solution given in S. Maria del Popolo, where the dome over the crossing is octagonal, and the pendentives are formed by corbelling and end horizontally at top (Fig. 142).

Other examples on a different basis give the transition from the crossing piers to the circular drum:--

a. Without pendentives, by inserted angle columns and corbelling the architrave, the Superga near Turin.

b. Then with pendentives retaining the square form in the lower portion of the domed interior, by corbelling the entablature, S. Maria di S. Luca near Bologna. (In Gurlitt, p. 503, incorrect in plan, but better in section, p. 505).

An interesting attempt to arrange the transition from a square plan to a drum with 12 sides was executed in the Pilgrimage Church near Milan (Fig. 143). Each pendentive is divided by a groin rib into two spherical triangles, but the groins are again concealed as much as possible by stucco and painting.

Likewise attempts were made to entirely remove the structural ideas of the pendentive by mural painting, as this was done in S. Andrea della Valle at Rome by Domenichino, or to change or to widen the same by painted architectural structures and fragments (Fig. 144). At the Baracco Chapel in the Cathedral at Lugano,⁷¹ the pendentives are apparently enlarged. In the portico of Villa Madama, the surfaces of the pendentives are entirely ornamented with flowers and scrolls. Nowhere is this rich art in difficulty, and the novel and peculiar only sparkle, and where the structural idea is sound, there the decoration is also to be characterized as of equal rank. At S. Peter it must be further stated, that I could decide at the last visit, that the springing lines of the pendentives at the great dome are straight and not curved (Fig. 145).

In Milan must it be further mentined, that in the first side

and sometimes certain the horizontal variety is a cross-
 ing, above which there is a thin white line.
 which is covered by a colored line in its divisions. As an
 example of a similar case, I have here a small one
 from over the crossing of St. Louis in the distance covered by
 horizontal lines, according to the idea of von Schimper in 1875.
 Let. I am going to check the statements there given.

In the analysis of cross varieties the horizontal lines
 across the horizontal lines with white lines, and with special
 attention, that in which the horizontal lines are
 one variety. With very few exceptions in which the
 the variety with horizontal or vertical lines, crosses and strong
 markings of the horizontal lines, in order to be able to proceed
 with the greatest freedom in the recognition of the cross-
 varieties.

Where the horizontal lines are employed the cross variety with lines,
 is processed in the horizontal lines in the same manner as the
 variety. But sometimes especially the horizontal lines
 have horizontal lines. Another of the cross varieties is the
 of St. Louis in 1875, with the arrangement of the lines with-
 out horizontal lines.

In cross varieties without lines as horizontal lines occur
 lines of coloring, or even are combined together. Of course
 some of the lines -- in the horizontal lines with lines and
 lines -- are found in one of the left side crosses of St.
 Louis, and in the horizontal lines of the horizontal lines
 in general, and in the horizontal lines of the horizontal lines
 the lines are found in the form of cross varieties in

the horizontal lines. The horizontal lines, especially in
 all the horizontal lines in the horizontal lines, with lines of coloring
 of the horizontal lines, and covered by lines and lines, St.
 Louis, and in the horizontal lines of the horizontal lines,
 mostly with the aid of rich coloring. One of the most

chapel on the right of the main entrance in Church S. Celso, the pendentives beneath the domical vaults terminate in a circular ring, above which then rises a drum with 12 sides, which is covered by a coffered dome in 12 divisions. As an example of a smaller stone double dome should be named the ¹⁹⁷dome over the crossing of S. Spirito in Florence erected by Brunellesco, according to the data of von Geymüller in Fig. 146. I am unable to check the statements there given.

85. Cross Vaults.

In the employment of cross vaults the Renaissance generally adopts the Renaissance vault without ribs, and with especial preference, that in which the groins entirely disappear near the vertex. With very few exceptions it decidedly rejected the vault with projecting or moulded ribs, bosses and strong swellings of the compartments, in order to be able to proceed with the greatest freedom in the decoration of the compartments.

Where the Renaissance employed the cross vault with ribs, it proceeded in its ornamentation in the same manner as the Gothic. Band ornaments accompany the ribs; the triangular compartments receive medallions with figures, the spandrels have grotesque ornaments. Entirely plain cross vaults in ordinary brickwork are found in the previously mentioned atrium of S. Celso in Milan, with the arrangement of flat ribs without keystones.

In cross vaults without ribs as decorative expedients occur stucco or painting, or both are combined together. Charming works of this kind -- in the antique sense with stucco and painting -- are found in one of the left side chapels of S. Maria sopra Minerva, as well as in the loggia of Palace Doria in Genoa, and as the most beautiful examples of free decoration may be taken the ceilings in the form of cross vaults in the Villa Madama near Rome by Giovanni da Udine.

86. Tunnel Vaults.

We find tunnel vaults in the antique sense, subdivided in all the forms peculiar to that time, with coffers or divided by transverse arches, then covered by stucco and painting, S. Scala d'Oro in Palace Doge, vestibule of S. Peter in Rome, ¹⁹⁶etc., mostly with the aid of rich gilding. One of the most

charming decorations of this kind is executed on the tunnel vault of the portico connecting the sacristy and Church S. Spirito in Florence (Fig. 147).

The tunnel vault with interesting side compartments is a form preferable employed by the Renaissance. Sometimes these compartments are arranged to make possible the admission of light, at others to distribute the thrust of the vault to definite points. (S. Stefano in Venice).

37.37. Oblong Cloister and Panel Vaults.

But chiefly the oblong cloister and panel vaults with or without intersecting compartments were introduced by the Renaissance as a favorite motive in forms of ceilings at great and small scales in corridors, (loggias of the Vatican), vestibules (Genoese palaces), living apartments, halls, stairways, sacristies, refectories etc. Here the style brings all its means of decoration into free development; here curved surfaces of vaults, slightly vaulted great ceiling panels and vertical wall panels offered themselves to the decorating master, that he could cover with great figure compositions, medallions and grotesque ornaments; here could he work with stucco and painting, giving his overrich imagination free scope. No other style in the world can exhibit any greater magnificence, more unrestricted freedom in the ornamentation, than just here the Renaissance has accomplished on the special basis created by itself.

The purely structural forms themselves have a pleasing effect in the diversity of their forms and their intersections, and are elevated to works of the highest splendor by the aid of painting and carving. (Hall in the Farnesina in Rome, hall in Palace Doria at Genoa, ceiling of the Sistine Chapel, and especially the precious one of the library in the Cathedral at Siena).

Likewise with a moderate extent in height of the rooms these forms of vaults could be employed; easily as if soaring they rise over these; men were not limited to a definite height of the springing, and the vaulting line might follow any possible curve.

These vaults were mostly constructed of bricks laid flat, trusting them to good mortar, good bricks and the skill of

of the workmen. Thus for example the cells in the Monastery of S. Marco in Florence are covered by tunnel vaults of oval section, that for a span of 11.5 ft. have only a uniform thickness of only 2.4 inches, this being the thickness of a brick.

197 For greater spans solid construction was mostly abandoned; men then adopted the expedient already mentioned by Vitruvius, of sham vaults of wood, constructed the vaults of arches of logs, furnishing them with a covering of boards or strips with a coating of plastering on reeds.

Among the oblong cloister and panel vaults of small dimensions, rhythmically arranged beside each other with the effect of coffers, are also to be reckoned the ceiling panels of loggias in the second story of the courts of the Vatican. The corridors are divided into great square panels (13.8 × 13.8 ft.), that are bounded by transverse arches, wall niches and open arches. Above the crowns of these four arches extend narrow architraves, from which spring 4 vaults, that rest against a single square horizontal sunken panel. This is richly enclosed, the ground is plain, but the surfaces of the vaults are ornamented by representations from Biblical history with architectural structures and grotesques in rich polychrome execution. Arranged thus continuously and only separated from each other by transverse arches, panels beyond panels present a charming and easily animated form of the ceiling.

A Gate structure in Pesaro, which according to the statements of the occupants is devoted to destruction, now shows the excellent construction of a tunnel vault with interesting compartments along the two longer sides. The vault in all its parts is constructed of bricks; now entirely freed from stucco, it shows in the interior no strengthening by projecting ribs and the like. The vaulted gateway (propugnaculum) is closed by two walls, each having a wide entrance gate. The longer walls are closed. The vault line has the form of a depressed semicircle. Five lunettes with compartment vaults over them are arranged on each longer side. These side compartments are equalized by a horizontal continuous course. The great vaulted panel between them is then subdivided by three transverse arches into two smaller square panels, diagonally vaulted. (Swallow-tail; Fig. 149). The span amounts to about

36.0 ft. Displacements in the vaults, cracks etc. are not found. To examine the upper surface of the vault was not possible to me; but I believe that a uniform thickness of one brick should be assumed for the vault with a corresponding backing of the side compartments. Like these ceilings were also executed others of the same kind. Those of Pesaro show, that men entered on the construction with forethought. In contrast to these were constructed the apparently vaulted ceilings of the four porticos of Villa Rotonda near Vicenza, that have proved to be plastered ceilings on wooden laths.

178 88. Annular Vaults.

Horizontal and inclined annular vaults were likewise drawn into the series of their structures by the masters of the Renaissance, particularly for the lower surfaces of the great winding stairways of different palaces, for example in Caprarola, Palace Barberini, in Palace Vatican in Rome etc.

As an example of a small spiral stairway vaulted beneath and above may be mentioned that in the double dome of S. Maria da Carignano, where the ascending annular vault is constructed in a very appropriate way.

89. Vaults of Slabs etc.

A peculiar vaulting is formed by stone slabs laid on the transverse arches, that extend from arch to arch and are joined by rebates into the form of an arch. (Sebenico).

Roof slabs over vaults are known -- we find them on the Cathedral in Milan, on Loggia dei Lanzi in Florence, and on this side of the Alps at the Minsters of Strasburg and of Freiberg -- but they lie there overlapping like great roof tiles, forming an inclined plane and do not have the forms of voussours designed to form the ceiling and roof.

The only construction in the greater style of this kind known to me was executed by master Giorgio Orsini at the Cathedral in Sebenico. On a system of semicircular transverse arches, that have a width of 2.46 ft. and a depth of 1.37 ft., cut stone slabs 9.5 to 13.2 ft. long, according to dimensions of the bays, overlapped in semicircular form and joined together, stepped externally and showing a smooth surface internally, thus forming at the same time the ceiling and the roof. The slabs have an average width of 2.46 ft., and vary between

14 to 15 in number in the different bays, while the transverse arches consist of 13 voussoirs. The latter are profiled like an archivolt with bands and beads, externally with rounds and intervening deep grooves, their surfaces animated by deep sinkings (Figs. 132 f, g), where it must be stated, that the bearing of the slabs on the arches and their joints could not be determined by me, owing to the good condition of the roof; the detail section given in Fig. 132 is problematical, but must correspond to the reality.

The side thrusts of the transverse arch of the vault of the middle aisle are directly resisted by iron tension rods, without which the construction would not have been permanent from the beginning. In similar manner are also executed the side aisles, where the vault has the form of a depressed quadrant. Five rebated slabs rest on semicircular transverse arches and also form here both ceiling and roof. Likewise with slabs and ribs is constructed in the most beautiful manner the steeply raised octagonal dome over the crossing. A white local limestone served as the building material, which now still gleams brightly in the sun, and only appears blackened in the interior by the smoke of candles and of incense.

As precedents from antiquity were here the vaulted buildings of Central Syria of the time of Marcus Aurelius, and particularly the ceiling of stone slabs of the Pretorium in Musm-
iye, which alone agrees with the construction in Sebenico. In the Essay mentioned below ⁷² I first assumed position in the matter at the suggestion of the learned publisher Graus, inspired for the art of the Renaissance. A later study at the locality has confirmed my opinion concerning the building.

Note 72. Der Kirchenschmuck. Papers of the Christian Art Union of the Diocese of Seccau. Year 17 (1886), nos. 1-5. Further see De Vogue. La Syrie Centrale. Paris. 1865-1877. Vol. 1, pl. 7.

But whether master Giorgio ever had any knowledge of the Syrian buildings must be very doubtful; I believe in no connection between the structures in the Hauran and those of Dalmatia, nor also in the derivation of one from the other. The natural conditions of both countries (rich in stone and poor in wood) led to similar results; both methods may therefore

pass for original, and of the Renaissance master we know, that he understood also how to skilfully express and spiritedly in the facade. (Further on this in the Section on Church Buildings).

90. Vaulted Wooden Roofs and Wooden Ceilings.

The forms of the roof and of the internal vaulting of these stone church ceilings of Dalmatia were also imitated in the capital of the republic of Venice, but constructed of wood instead, evidence of which is afforded by S. Maria dei Miracoli, the little and charming jewel of the early Renaissance. The internal plain coffered tunnel vault consists of a construction of logs, which in part is suspended from the rafters of the framework of the roof above it, shaped like the body of a ship. (Fig. 150). Ceiling and roof are there separated from each other by a space for passage.

91. Buttresses.

If the direct resistance of the side thrust of the vault by insertion of iron tie-rods was not feasible, then on the external walls at the places where supporting or transverse arches rested on them, either by special arrangements in the plan or by masonry projections, were arranged buttresses projecting internally or externally, thus employing the same means as Roman antiquity and the middle ages. Only in the North were they made strongly projecting, mostly far beyond the necessary dimensions. (See Cologne Cathedral, Freiberg Minster and other architectural structures).

This excessive size was avoided in the South as unjustified. The buttresses with offsets were already not adopted on Milan Cathedral, and just as little on the Certosa near Pavia and on the Cathedral in Como. As the architectural structure last mentioned shows, they form in the Renaissance uniformly projecting masonry masses of moderate thickness, which from a boldly projecting and moulded plinth rise vertically to the main cornice, which is returned around the buttress. The angles are accented by flat mouldings, and they are divided in height by transverse mouldings of the same profile.

Following mediaeval models, figures on consoles animate the lower third of the height, recalling those of the preceding period ornamented by figures with canopies, but with the difference, that the sculptor now again freel

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difference, that the sculptor now again freely expresses himself, and is not restricted to the furnishing of ascetic figures placed in shrines.

A finish on this projection denoted in the middle ages the "ending of the mass", the deliverance of the upwards acting forces striving for evolution and freedom." The Renaissance changed this in itself artistically sound ground motive into a quiet termination, which in the most beautiful way brings the lower masses to an end. Airy and open architectural shrines rise above the main cornice on the solid and strong substructure; finely curved little domes with consoles, balustrades and obelisks give a quiet and effective upward ending in well-weighed and beautiful outlines.

201 As in Como, so also is carried out in an equally charming manner on the Certosa near Pavia, especially on the side facade next the little cloister court della Fontana.

In these terminations the early Renaissance develops the entire charm of its imagination, the whole wealth of its treasure of form, its sense for beautiful outlines with architectural structures rising free in the air (Fig. 151). No addition like any other, and still they remain in harmony with each other.

92. Water Spouts.

The collection of rain water and its removal from the building at definite points, busied antique art as well as that of the middle ages. The terra cotta and marble gutters are found on antique temples, public and private buildings, with gutters cut in stone on the mediaeval cathedrals.

Simple channels, trumpet-shaped outlets, heads of lions or of other animals (boars, panthers) with open mouths, and masks on antique buildings discharge water from the roofs far from antique buildings. For mediaeval these are fanciful forms and clean animals, by which the water is ejected, not to the benefit of the structure, which frequently suffers more by these streams of water, than if the rain water were allowed its free and natural course. (The roof gutters have reason and worth only in connection with down pipes leading to the ground). The Renaissance makes its own the same in perfection; but it forms its water spouts infinitely nobler and more

beautiful. Strange caricatures, facetious and sometimes indecent figures did not ornament its cornices; it introduced for these dignified statuary ornaments; nude female and male figures, bearing vases on their shoulders through which the water poured. On the Cathedral in Cocco these belong with the most charming decorations of the buttresses, where leaning against the wall in a firm pose, they are placed between architrave and cornice (Fig. 152). Likewise beautifully wrought are they found on Palace del Comune in Brescia, above the main cornice and before the attic parapet. Somewhat ruder are those on Church S. Marco in Venice, between the additions in ogee form to the main facade. Everywhere grace and charm in detail, beautifully shaped human bodies instead of the mediaeval monstrosities! In cases where one could not or desired to go so far, men had recourse to the antique lions' heads spouting water.

203
204 93. Coursing of Voussoirs; Bonding and Stonecutting.

From the antique and mediaeval methods of coursing stones -- natural or artificial -- in vaulting, men did not generally depart in the Renaissance; the stones always so laid in tunnel, cross, niche, domical and vaults with intersecting compartments, that their beds radiated from the centre or axis of the form of vault. For front arches, doorway or window arches, men also used the notched ashlar, which were authenticated in the Roman buildings of the late period,⁷³ particularly when the voussoirs were to be connected in definite form with the adjoining courses of the facade. For straight arches, they preferred to retain the simple continuous radial joint, rejecting the late antique mode of the toothed voussoirs (Orange, Spalato, Syracuse), which in the time of Theoderic led to wonderful forms, which were then transferred to vaults in stonecutting. (See the jointing on the Tomb of Theoderic in Ravenna). Peculiar coursing in cross vaults with the use of stone slabs between the ribs is found in the side aisles of the Cathedral of Sebenico.

Note 73. See Part II, Vol. 2 of this Handbuch; Baukunst der Etrusker und Römer.

For round-arched openings there return on this side of the Alps doubly toothed ashlar on German Renaissance buildings

(Villa Stelten near Lörrach etc.), as also on mediaeval structures (for example on the choir arches of the Castle chapel at Krautheim in Baden, where the keystone has two semi-projections and must have been inserted from the front). Was now this Baden architect, 1000 years later, indeed inspired in Ravenna for such jointing?

But from the traditional position of the stones men consciously departed in brick vaults, as shown by the great structures of S. Peter and of S. Maria del Fiore, where they adopted herringbone coursing of the voussoirs, and on other places for cross and tunnel vaults, diagonal vaulting (swallow-tail) was executed. On the vaults of the beautiful double portico of a loggia near Gate Pusterla in Mantua (Fig. 153), I could determine this in the years 1871 and 1910, where the stucco had partly fallen from the surfaces of the vault, and then in 1892 for the tunnel vault with intersecting compartments in the refectory of S. Maria delle Grazie in Milan, where repairs on the ceiling were then being made, and in 1910 on the Gate portico of Pesaro mentioned (Fig. 149). A small number of the hundreds or thousands of constructions of the same kind.

205 Section IX. Roof Construction.

94. Roof Trusses.

On the whole, in Italy, men did not depart from the flat roof in the historical period. What the ancients had desired continued in honor from the century to the late middle ages and also in the entire time of the Renaissance until our days. The German masters of Gothic must accept this on Italian soil; the steep roof of the North was always avoided as unsuited. Under such conditions it cannot appear wonderful, that the conservative South presents little novelty in this province of construction. Beyond the antique purlin roof seldom a later architect advanced, and the different style periods only made a variation in this, that one shows the construction of the roof framework of their portico or church roofs, while the other conceals it from the observer by an intervening coffered ceiling.

Greeks and Romans indeed must have scarcely left visible the construction of the framework of a roof on a monumental building, or yet only in particular cases; the intended coffered ceiling formed the termination of the interior. Likewise for the Early Christian structures must the same have been the case, and only when men were limited in means, was it omitted.

By the same views also indeed were impressed the masters of the Renaissance, who constructed the ceilings of S. Zeno and S. Fermo in Verona, in the Baptistery at Urbino, or the Eremitani at Padua or of S. Stefano in Venice etc. They might not use the antique mode of covering the interior, but also desired to show the wooden rafters of the roof, and they sought to present a novelty in the vaulted wooden ceilings. The Protorenaissance could only bring the ancient framework; where it left this openly visible, it made it an object for artistic treatment; it ornamented and painted the woodwork, adding carvings (consoles and decorated bands) thereto, as shown by the beautiful open roof framework of S. Miniato near Florence. (The existing painting is not the original one).

But the aroused Renaissance also rejected both these gifts; it either left the open framework (S. Francesco al Monte-- "the beautiful country girl" of Cronaca (1504), and this only

in few cases, where it concerned simple structures, or it already decidedly returned in the early period to the simple coffered ceiling, whose most beautiful example in varied treatment is indeed to be seen in S. Marco at Rome and in a work in white and gold in the middle aisle of S. Maria Maggiore at Rome. Therein it did not strenuously adhere to a carpenter's framework of massive timbers in the sense of Grecian stone ceilings; it rather utilized only the continuous members of their double tie-beams as structural timbers, and placed between these coffers in light woodwork of boards. To this mode of construction was added the execution of diagonal free coffered forms, as they appeared on the vaults of the Roman baths and of the Basilica of Maxentius, which finally led to the rejection of every form derived from the construction. The combination of large and small coffers of every shape -- the round form not excepted -- frequently with rich carved work, like the ceiling of the Badia in Florence etc., was the final result. (Also see the wooden coffered ceiling from the Cancelleria in Rome in Fig. 156). In combination with gilding and color, with the addition of figure and ornamental painting, these ceilings -- and this is said with reference to the ceilings of Palace Doge in Venice -- belong to the most splendid works created by the Renaissance, and moreover what has ever been done in this sense in the world. The highest climax of ability is here shown, and what magnificence and what a sense of beauty is apparent here !

These wooden constructions are all made of accurately fitted and joined woodwork. The rich commercial city of Genoa in allied undertakings made an exception from the ancient rule, and with otherwise the highest elegance in execution, had recourse in other building materials to a rather primitive and peasant-like procedure, that we find elsewhere only in mountain regions with abundant forests. Instead of hewn timbers for the roof here appear round trunks, only barked, just as furnished by the forest, but where men however adhered to the ancient purlin roof.

Gauthier in his work mentioned below,⁷⁴ first described this construction, and $\frac{1}{2}$ reproduce in Fig. 157 one of the most interesting examples in the ceiling and roof construction of

the Hill of Jomarcos built by Alaric, whom I visited at the
 building, and later took detailed measurements in 1928.

At Jomarcos, 1928.

These building timbers were observed with difficulty, but
 they were also confirmed the original model; instead of
 a single piece, employing many narrow pieces to receive joining-
 and fitting the beams, when the beams are placed in the
 position and the square space between is the size of
 about, so that this amount only is 18.5 to 19.5 in. in the
 roof framework, over the corners of the pillars about 18.5
 meters in distance and in the latter part of the roof.

A peculiar massive construction is shown by the ceiling and
 roof in the great hall, consisting of 22.5 ft. of pillars
 (Fig. 185), the latter shaped as a segment of a
 circular vault, the latter having the form of the section of a
 vault, which is here simply a single piece of wood.
 The pillars are not really pillars, but are simply
 and the massive timber frame was constructed with the
 resulting great roof construction, and no wood work of any
 sort in the roof. The roof is composed of an interesting
 fifteen great thick pieces about 2.5 ft. long and arranged

along, and these pieces were connected at the corners by ex-
 tra beams, on which the roof of the great hall was
 placed, giving it the shape of a vault, giving it a
 form of the roof. The beams are about 4.5 ft. long and
 are held together by a single piece of wood, and a
 great piece of wood with four beams in the roof, the beams
 are placed in a vault, giving it the shape of a vault.
 The great timber vault form formed from two big pieces,
 these also are likewise constructed as thick pieces, giving
 which still another piece like thick beams.

This part of the building next the entrance point and
 joined by X-beams or beams, while the preceding and close-
 to one are connected by these beams (see above) extending
 from the great hall to the other end of the building.

the Hall of Commerce built by Alessi, which I verified at the building, and later took detailed measurements in 1899.

Note 74. Gouthier, M. Les plus beaux Edifices de la Ville de Genes. Paris. 1830.

Where building timbers were obtained with difficulty, the Renaissance also continued the ancient methods; instead of wooden tie-beams, employing masonry arches to receive horizontal rafters or purlins, when the rafters are chiefly of small dimensions and are spaced apart according to the size of bricks, so that this amounts only to 13.8 to 15.0 ins. in the roof framework, over the porticos of the cloister court of S. Lorenzo in Florence and in the Badia near Fiesole.

95. Fireproof Ceiling and Roof Construction.

A peculiar massive construction is shown by the ceiling and roof over the great hall, measuring 11560 × 52.5 ft. of *Palace Ducal* in Genoa (Fig. 158), the former shaped as a segmental tunnel vault, the latter having the form of the section of a ship, with which we have already become acquainted in Venice. The *Palace* was originally built by the Lombard architect Andrea Vanzo; but it almost entirely burned in 1777, whereupon the Genoese architect Simone Canone was entrusted with the rebuilding under the condition, that no wood should be employed in the roof. He solved the problem in an interesting way. Fifteen great brick arches about 2.5 ft. deep were arranged at regular distances over the segmental tunnel vault of the ceiling, and these arches were connected at the crowns by brick beams, on which at each side of the arch are fastened hangers dropping almost to the ceiling vault, aiding to support the ties of the arch. The arches are about 4.6 ft. apart and are still further connected together at each crown by three great slate slabs with four others in the arch, directly over the segmental vault, being placed through iron rods. Against the great tunnel vault thus formed then about two hip roofs, whose hips are likewise constructed as brick arches, against which about smaller arches like jack rafters.

The pair of arches lying next the the beginning point are joined by X-braces of masonry, while the succeeding and closer ones are connected by stone beams (slate slabs) extending from arch to arch are further laid on the exterior overlapping

slate slabs, in the same way as at Sebenico, that bear a bed of mortar, into which are set the little roofing slates, just as on the roofs of the Church S. Maria da Carignano.

If at the beginning it was said with a reservation, that the Italian Renaissance at no time departed from the flat roof, here is also true the proverb:-- "No rule without exceptions."

2/0 Sebastiano Serlio (1475-1522) in his book on Architecture (Book VII. p. 197. Venice edition, 1584) brings illustrations of roof constructions of his time, in which the height of the roof are to the span as 1 to 4, and therefore must be counted with flat roofs. In accordance with ancient traditions, they are built as queen-post trusses. On the arrangement and inclination of the roof surfaces he only speaks so far as to state, that these depend on the covering material, then on the wind pressure, on the depth of ice, snow and rain, which vary in different regions. Compare also in this sense a roof construction by Giuliano da Sangallo (Fig. 159; after his sketch-book edited by Ch. Hülsen) and the roof truss mentioned over the Ticino Bridge near Pavia, as well as the roof truss of the loggia of the City Hall in Siena.

96. *French Roof*
He was acquainted with, and also gives the construction of the French roof ("according to French custom"), that must be conceived in form and section as an equilateral triangle (Fig. 160). He prefers for this roof a covering by tiles (tiles with holes and nailed on wood strips), but he also says, that it may be covered by lead sheets, which is much more durable and most securely protects from rain. But in France the roof surfaces are covered by slates ("light blue stones called arduosa (France ardoise), a covering, that is much cheaper and more refined."

In his designs (Book VII) Serlio frequently departs from the falt roof, and adopts ratios of height to clear span of 1 to 3 or 1 to 2. For gables he also takes a ratio of 1 to 1 (Book VII, p. 133-135), and in designs on pages 222-232

(Book VII) one of 1 to 3 for two attics with two rows of dormer windows over each other (Fig. 159). For the beautiful Castle Valentino in Park Valentino at Turin, for the two angle pavilions (2 x 3 windows) is strictly executed the old French roof

with the broken hips -- thus on one of the best buildings of Turin ("one of the best architectural works of Turin, according to G. Isaia;" see Section XX on Palaces). The building was erected about the middle of the 17th century in the style of French chateaus of that time at the command of Maria Christina of France, the widow of Duke Vittorio Amadeo I. Since 1860 a polytechnic school was located therein.

It is indeed the only building besides Palace Stupinigi near Turin, that King Charles Emanuel III had erected after the designs of Savara, but which was changed externally by Alfieri, by a genuine French roof.

Of the other French forms of roofs, that Jules Hardouin Mansard or Mansart invented, and first employed on the Chateau at Clagny and on the stables at Versailles (1680), and which was composed of two roof slopes, the Italians made use of only for the domed roof of the Palace at Stupinigi.

For the form of the "mansard roof", L. Suckow (Jena, 1781) determined, that the base is to be described a semicircle, ^{on} which is to be divided into 4 or 6 equal parts, according to which are located the angles.

The apexes of steep roofs, Serlio also prefers to furnish with a lantern (Book VII. p. 215-217).

Tower roofs of churches and villas were either formed with flat roofs in the style of the Early Christian towers, as quite steep conical roofs, or hemispherical roofs resting on columns. Domed roofs of wood or stone with metal covering received a stepped base in the style of the dome of the Pantheon, only in part appearing externally with or without a lantern, or they were shaped as true or raised hemispheres. Serlio speaks of log construction and wooden vaults for great halls, for which he indeed had neighboring earlier models in the log roofs of the Basilica at Vicenza and at Padua. (See their representations in Section XX).

Section X. Stairs and Stair Halls.

"By many a beautiful vestibule,
I already strengthened my art sense,
By my beautiful paths,
It is a real blessing."

Jacob Burckhardt's Letters to an Architect. 1870-1889.

97. Stairs.

With the changed mode of living, arrangements became necessary in palaces and houses, unknown to the earlier time. In antiquity life on the ground level passed for the only dignified and proper mode for those of high place and wealth; living in rented houses of several stories in imperial Rome was left to the "poorest common tax-payers," who gained access to their stories indeed only by narrow wooden stairs in straight flights.

218 For mediaeval buildings in stories with bays and windows toward the street, the stairs already played a better part; the dignified occupants retired to a higher story, and left the rooms in the ground story to the servants, in cities to the shops and artisans; citizens in good circumstances did likewise.

Finally, wooden or stone winding stairs occupied less floor space and contested preeminence with those in straight flights, whereon it must be said, that ancient Rome was also acquainted with them, judging from the existing spiral stairway in the "spiral Columns" of Trajan and of Marcus Aurelius in Rome. Likewise in the imperial Palaces at Treves and Arles, in the Basilica of Maxentius, in the triumphal arches etc., 219 are partly preserved spiral stairs of masonry in circular rooms. Winding stairs were characteristic in the countries on this side of the Alps for the entire period of the style; they could easily be at any part of the building and from each story, which was indeed one reason for their being generally preferred.

In the time of the Renaissance, living in the upper story was a requisite for distinguished persons. As the "noble or royal story" (*piano nobile* or *reale*) always passed the second story in Italy in the residences of princes. Generally the riots and factional fights in the cities made this removal a

...and traffic on the streets, in corridors and elsewhere.
...the national house design, the medieval permitted, and
...even more part of the construction.

55. Street Hall.

Given in a finished floor level a double corner
to it, and back instead of winding stairs approach the lower
stairs, easy to ascend, with straight flights in two parts
one with landings; the lower stair hall of the greater sky-
...was adopted in domestic architecture, and from a new mon-
...was introduced in the artistic treatment of the plan of
...This is also a mark of the Renaissance, again to
...In addition to the position at the begin-
...it may be said further, that indeed the imperial palac-
...on the ground in Rome must have given striking points
...for the technical and artistic solution of the new problem,
...where there is no plan with landings between walls face
...of which would still exist a technical solution.
...the existing stairs were reserved for service and for transport-
...ation, with one of the stairs, the latter accessible by stairs,
...to which greater dimensions were also reserved a monumental
...and a grand staircase, as for the existing stairway of
...in the Belvedere of the Vatican, for that in the vi-
...near to San Carlo, in Roman Palazzo, the Palazzo Farnese
...at Rome, in Palazzo Farnese at Caprarola and many others.
...Note 55. See also, "Le Regence des Etrusques et Etrusques."
...No addition. (Part II. Vol. 1 of this Handbook.)
...The medieval stairs with landings in circular half-
...leads and stairs mostly lay outside in the enclosed courts
...without walls (Raphael in Florence, Palazzo della Signoria in
...Vatican, Palazzo Farnese at Caprarola), where of the early Renaissance
...also mostly within the houses approached the street, only
...half detached from wall and window. (Palazzo Ambrosiano in
...of the Renaissance in Florence). The Renaissance was character of the
...also and mostly covered by external walls, while in Rome the
...external walls were of solid masonry and solid walls of
...the street, and are covered by stone vaults.

already necessary on the ground of safety, and so it was also found pleasant to be able from a secure lookout to observe life and traffic on the streets, in combats and pleasures.

What the antique house forbade, the mediaeval permitted, and even more that of the Renaissance.

98. Stair Halls.

Living in a dignified upper story required a better access to it, and thus instead of winding stairs appeared the larger stairways, easy to ascend, with straight flights in two branches with landings; the proper stair hall of the greater style was adopted in domestic architecture, and thus a new impulse was introduced in the artistic treatment of the plan of the house. This is also a merit of the Renaissance, again to create a novelty. In addition to the quotation at the beginning, it may be said further, that indeed the imperial palaces on the Palatine in Rome must have given starting points for the technical and artistic solution of the new problems, where stairs in two branches with landings between walls faced with marble still exist in doubtful ruins.⁷⁵ But there the winding stairs were reserved for service and for transportation, with one without steps, the latter passable by mules, or with greater dimensions they also received a monumental form and a richer treatment, as for the winding stairway of Bramante in the Belvidere of the Vatican, for that in the vineyard di Papa Giulio, in Palace Borghese, in Palace Barberini in Rome, in Palace Farnese at Caprarola and many others.

Note 75. See Durm, *J. Baukunst der Etrusker und Römer*. 2nd edition. (Part II. vol. 2 of this Handbuch.

The mediaeval straight stairs with landings in public buildings and palaces mostly lay exposed in the enclosed courts without roofs (Bargello in Florence, Palace della Ragione in Verona, Palace Rector at Ragusa), those of the early Renaissance mostly within the porticos surrounding the court, only half protected from wind and weather. (Palace Arcivescovale and Palace Gondi in Florence). In Tuscany the flights of stairs are mostly covered by tunnel vaults, while in Genoa the stair walls rest on columns at one side and solid walls at the other, and are covered by cross vaults.⁷⁶

Note 76. A tolerably comprehensive collection of stairway

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plans, even if in the form of hasty sketches, but characteristically and well selected and drawn, may be found in Mylius, C. J. *Treppen-Vestibul- und Hof Anlagen aus Italien*. Leipzig. 1867.

11/ The first entirely convenient and broad stairway is that designed and built by the younger Antonio da Sangallo in Palace Farnese at Rome, according to which all earlier examples appear steep. Ascent by it is easy and is best suited to the stride of a man of medium height.

Leon Battista Alberti, in Book I, Chapter 13 of his *Treatise on Architecture*, required an uneven number of steps and 1 landings ("landing places") in a flight; for stairs the risers not over $5 \frac{3}{4}$ ins. or less than $3 \frac{5}{6}$ ins., the treads not less than 13 or more than 23 ins. In his famous Farnese stairway Sangallo adopts a rise of 4.8 ins. with a tread of 17.6 ins., giving the surface of the tread a slope of 0.6 in. forwards, the tread being finished with a round, fillet and cove (Fig. 161). Letarouilly (text, p. 281) in accordance with the statements of Sangallo drew a plan of a stairway with the scheme of a section, in which the beginnings and endings, as well as the inclinations of the flights are determined. He takes $3 \frac{3}{4}$ ins. rise per foot run, thus being for the treads of the steps about three times the rise.

From this example forward no more defective stairs were constructed, when only the means were properly supplied. The stairways and the number of steps increased greatly in the larger public and private buildings in the time after the high Renaissance, and especially in the Barocco style became architectural works, that no longer stand in proportion to the useful rooms in the structure, but always formed the most magnificent parts thereof, adorned by costly materials, noble sculptures and rich paintings. They became art works of the highest rank in themselves, whether executed at a great scale or in more modest proportions. They are the pride of the Barocco palaces in their great breadth, low risers, convenient landings and stone balustrades.

In cost and splendid coloring of marble stands alone the stairway of the Palace at Caserta; in grandeur of design with good dimensions that of the Brera in Milan and those of

almost all Genoese palaces (Figs. 162, 163), and especially that of the University, are supreme.

Also the Scala Regia in the Vatican may be reckoned with these, in spite of the simplicity of its design.

Marble, travertine and other limestones, sandstone, slate and bricks were employed for the construction of stairs; those richly carved in wood, in the fashion of German and English Renaissance stairs are not known to me in Italy. Those built of stone are both open as well as constructed between two solid walls, or are supported by vaults.

Distinct types of stairway plans developed according to the data of tradition or local conditions in the different leading cities of Italy. Winding stairs and straight stairs with landings contend for supremacy. In both the formal expression is determined by the mode of construction, and therewith also the effect of the interior. This may be simply earnest, but it may also become gay and splendid.

J. Burckhardt (*Renaissance in Italien*. 1878. p. 190) says:-- "To the stairs Rome owes an important advance in convenience and in imposing effect." Admitted -- but it is not excluded, that the same progress in the imposing was also made otherwise. The convenient stairway of Palace Farnese, for example, is not less than the imposing effect.

H. Wölflin recognizes in his Essay -- *Renaissance and Barocco*, Munich 1907 -- in his stair designs the mode of thought of Romans and Florentines, and thus their enjoyment of life and the earnestness of human existence. However attractive and tasteful such observations may be otherwise, they are worthless to us. The artisan can thus begin nothing, or any other thoughtful men just as little. And when it is there said, that the vestibule of Roman stairways (not also of the Florentine ?) is a simple vaulted passage, leading to the portico of the house, and that the stairway itself is only "a brief passage," (what is a stair passage ?), and remains enclosed between walls, this does not correspond to the facts. In Palace Corsini-Rome (rebuilt by F. Fraga; born 1699; buried in Rome in 1743), likewise in Palace Barberini-Rome the stairs lead into very beautiful and separate anterooms or vestibules and not into passages. Were these later examples pl-

placed earlier, then the Roman would differ from the Florentine of the same time nowise in arrangement, or yet only by scale and convenience in very small part.

The stairway design of Palace Farnese and that of Palace G Giraud are entirely similar, and also that of the cancellaria shows the same arrangement: in two flights separated by a solid wall and landing lighted by a window, as well as an opening into the galleries of the columnar court in all the stories. Is this any different from Palace Strozzi in Florence, Palace Giugni there or others? Where remains the earnestness?

Both in straight as well as winding stairs, besides the stepped arrangement of the steps, there are those constructed with interruptions or with smooth inclined planes, by which first are not meant the service stairs in the dwellings of the wealthy, and also not the tower stairs in churches, but the state stairways in the larger public buildings and palaces. The wide story stairway in Palace del Governo at Bologna, the Palace Comunale (apparently erected by Bramante in 1509) exhibits a treatment of the stairs in accordance with Fig. 1 161 I. Each seven rows of bricks laid flat alternate with a projecting limestone slab, whereby slipping on the inclined plane is prevented. Similar arrangements are also to be found in steep streets for traffic. Walking on these stairs is not very pleasant. Bramante in his beautiful circular winding stairway in the Belvedere of the Vatican preferred the same inclined plane to the steps -- for the use of the highest lord in Christendom. The travel surface is subdivided in panels by ordinary hard burned bricks, whose dividing strips run radially; the intermediate surfaces are paved with bricks set diagonally (*opus spicatum*). The stairs rest at one side on the massive enclosing walls, at the other on a spiral entablature -- architrave, frieze and cornice -- which is supported by columns of the Doric and Ionic orders at regular distances. The under surface is formed as a flat vaulted ceiling, the railing as a balustrade, thus being easily made open.

The solid wall is omitted beneath the inside string, and this arrangement belongs to not the late time, but to the best period of the high Renaissance, having the greatest architects of this epoch for its authors.

The stairway has a diameter of 29.1 ft., the inner space from centre to centre of columns measuring 12.7 ft. The columns begin at the entrance with the Tuscan order, followed by the Doric, then the Ionic and lastly the Composite; they stand directly on the strings without pedestals. The interior is artless and without ornament by the framework of the roof, the slender turned balusters forming the railing between the columns are of wood. These and all succeeding winding stairways of the grand style extended from one story to another without landings.

The fame enjoyed by this first construction did not allow architects born later to sleep. Vignola attempted it in the Villa di Papa Giulio near Rome. With the very much smaller diameter of the stairway (18.0 ft.), he could not count on an inner open well hole, and therefore had recourse to the plan of a newell, which he decorated by Doric half columns and an entablature (Fig. 165).

For the stairway of greater dimensions in Palace Farnese in Caprarola, he placed himself on the same basis with Bramante, who had preceded him with the art work 40 years earlier. The stairway is circular as there, but about 3.3 ft. wider (32.0 against 29.1 ft.), and instead of the single columns occur those coupled on a common pedestal, but which entirely belong to the Tuscan-Doric order. The interior is terminated at top by a dome. Instead of wooden balusters, stone pilasters appear between the pedestals as a railing. By these changes Vignola obtained a richer architectural appearance and a greater durability of the design (Fig. 166).

223 At the beginning of the 17 th century Martino Langli attempted this in Palace Borghese at Rome with an oval plan, likewise with coupled columns, with axes of 23.0 and 26.3 ft.

Borromini (1599-1667) more grandly conceived the problem in Palace Barberini in Rome, also giving preference to the oval space with axes of 26.3 x 29.5 ft., and the use throughout of coupled Doric columns on pedestals. He also covered the stairway by a dome (Fig. 167).

A combination of a semicircular with a straight stairway was created by the Lunghi mentioned in Palace Borghese.

With the work of Borromini in Palace Barberini this kind of

these railway lines have reached its climax and ending in a
the right hemisphere in Rome.

For the architectural elevation and the subdivision of a
standing assembly with a dotted skyline in a circular space.
Fig. 188 gives a schematic basis on the ground of the center-
line of the railway, Vignola and Gualini.

On the other hand, when to the Renaissance between generally
the winding stairs (Fig. 189) yet only as service stairs (Fig. 189)
as (Fig. 189) in a circular space 5.5 ft. in diameter with a

plain bowl, small and steep as in the middle ages. But the
by likewise recognize the entire circular space in one and
the flights with (Fig. 190) (Fig. 190) (Fig. 190), which
balance on the portion of the circle, or are even placed

these (see examples in the plans of Palace Arzuffi-
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state stairway must have reached its climax and ending in the time of the most blooming Barocco, based on the beginnings of the high Renaissance in Rome.

For the architectural elevation and the subdivision of a winding stairway with supported strings in a circular space, Fig. 168 gives a schematic basis on the ground of the constructions of Bramante, Vignola and Guarini.

On the other hand, what do the Florentine palaces present? Also winding stairs indeed, yet only as service stairs (Palace Strozzi) in a circular space 5.9 ft. in diameter with a plain newell, small and steep as in the middle ages. But they likewise reproduce the antique straight stairs in one and two flights with landings (Imperial palaces in Rome), which terminate on the porticos of the courts, or are even placed within these (see examples in the plans of Palace Arcivescovile, Palace Gondi in Florence, and also of Palace Bevilacqua in Verona by Sanniccheli). They mostly lie with the end next the street, from which they receive daylight. The steps rest at both sides on solid middle and side walls, or entirely on the vaults covering the flights. The landings are covered by domes or cross vaults, affording absolute safety for those passing, from fire and attacks of all kinds, by the peculiarity of the plan and their monumental construction. The normal width of the flight does not exceed the measure of 6.6 ft. The ratio of riser to tread is mostly convenient, the front edge of the step losing its angle by moulding with round and fillets.

Bramante employed the motive in Palace Giraud at Rome, and Antonio da Sangallo in the frequently mentioned Palace Farnese. Except that there to the two main flights was joined a third short entrance flight. Men wished to protect by this the stairway from drafts of air, and yet to make the entrance to the stairway pleasing to those entering, without abandoning the view into the interior. Also men with this addition economized the extent of space, which the stairs required, especially for high stories.

Translated into a suitable Barocco, we find the stairway design again in Palace Ximenes at Florence with a story height of 28.0 ft., executed by G. Silvani (1620). Michele Sanm-

the entire series of rooms, the ceiling paintings of which in the great hall of the upper story, and the two long galleries, and the large hall in the Palace of the Victor-
is in the Palace of the Victor.

The nearly effective stairways in two flights with a land-
ing and a solid masonry wall was followed by the early gallery,
in which the masonry wall was covered or covered by support-
ing columns, and were particularly favored in the case of the

all and other columns with round arches above them, and
some were covered by the floor, ascending and often visibly
discovered, and the steps, very originally arranged and a
high decorative effect and an interesting mode of arranging

from the decorative small light colors. Beautiful examples
are also found in smaller houses on Place d'Armes, Place de
Paris and Place d'Orléans in Paris. With these are designs
as seen generally connected with the decoration of the vestibule,

and paintings, to which are added niches with busts on pedestals,
and a large number of other objects, and the wall-
papers and colors; and should be observed for future enjoyment in the

living and social rooms. (See fig. 156, Palace of the Victor.)
The other rooms are the study of the house and the library-
room of the house, and the sunny rooms of the living-
rooms and the library.

For greater comfort, particularly where the stairs only are
needed through one story and a slight effect was desired.
Decorations was not to the decorative motive, as shown by the
stairs in the Palace of the Victor, a large and beautiful work of the

library, and in the Palace of the Victor.
Decorations were made in the library and the library were taken
and in the library, and to not give to the view of the library
and, or the blue and the enjoyment of the library of the

library.
The stairway with landings and five flights, that decorated
the entire width of the house in a row, shows the same prin-
ciple, the same demand for clear air and sunshine (see Palace
of the Victor, fig. 156, Palace of the Victor).

Sannicelli likewise makes use of it in the splendidly developed ground plan of Palace Canossa at Verona, with its beautiful court architecture, the ceiling paintings of Tiepolo in the great hall of the upper story, and his two loggias toward the Adige. We further find it in Palace Pompeii alla Vittoria and in Palace Roncali at Verona.

The plainly effective stairways in two flights with a landing and a solid middle wall was followed by the airy designs, in which the dividing wall was opened or replaced by supporting colonnades, that were particularly favored in Genoa. Small and slender columns with rampant arches above them, and cross vaults covering the flight, ascending and often visibly distorted, support the steps, very originally arranged and with picturesque effect and an interesting mode of admitting light from separate small light courts. Beautiful examples are also found in smaller houses on Place Cambiaso, Place San Luca and Place Giustiniani in Genoa. With these airy designs is then generally connected a gay decoration of the vestibule, consisting of stucco frames and ornaments, grotesque and figure paintings, to which are added niches with busts on pedestals, in a charming manner. Men desired air, light and varied colors; all should be prepared for joyous enjoyment in the living and social rooms. (See Fig. 169, Palace Parodi). Nothing better recalls the gravity of the Romans and the earnestness of the Tuscans. Mankind on the sunny shores of the Riviera desired something different.

For greater designs, particularly where the stairs only extended through one story and a dignified effect was desired, recourse was had to the Florentine motive, as shown by the stairs in Palace Durazzo, a later and beautiful work of Tagliafico, and in Place Lercari at Genoa.

Otherwise also where uniform and greater designs were required in architecture, men do not give up the view of the dear sun, of the blue sky and the enjoyment of the fragrance of flowers.

The stairway with landings and five flights, that occupied the entire width of the court in palaces, shows the same tendency, the same demand for clear air and sunshine (see Palace del Municipio, University at Genoa), which we also meet with

in Sicily, as proved by the stairway designs in Palazzo Orto
in the Galleria near Palazzo and the beautiful double stair-
way in the Benedictine Abbey at Caserta (fig. 170).

Giulio Monelli also attempted in Palazzo Strozzi in Rome (1790) to place two stairways instead of facing (fig. 171).
That is there survives for in the lower stories is again con-
sidered by the still forms above. A plan with three flights
and two landings with open wall holes was now finally pro-
posed. Through the great passage plane exhibit a little com-
plicated, from which man turn to left and right to the lower
sides of the court arcades. These double stairways were also
adopted in other places in Italy, where it was desired to do
something different in respecting the design and to go beyond
the ordinary measure of the essential, as shown in the double
double stairway in the Strozzi at Milan. With Spanish de-
signs the double stairway is shown in the Strozzi at Milan
and the double double stairway of the Strozzi at Milan
may be the stairway of Vascello with three flights in the St-
rozzi at Caserta. Majestically from floor to ceiling (1825 plan
of the Palace in Section X a). In this plan lines the great
and stately in unimpeded procession by costly marble.
Here also comes the stair hall in Palazzo Strozzi and in the
and remains at Naples, in the Palazzo Strozzi and in the
all of later date, yet also of a grand style.
The state hall of the Palazzo Strozzi increased to the most
important and architecturally most prominent room, far beyond
the requirements, and also now shown in Italy, but even in a
higher degree in France and Germany (Strozzi, Strozzi, Strozzi,
Strozzi, Strozzi etc.), where it expressed the country magnificence
and authority of the court. In the original only the
saying the name, it developed in the course of the Renaissance
and according to the changed demands in feeling and
in life, to the highest artistic impulse in an architectural
work.

"Whatever in Venice makes some impression in the interiors
of the houses -- stairways and halls -- is of later origin.
It was rather the master concerned with the office, not the
use of a fine style." This expression of J. Burckhardt I can-

in Sicily, as proved by the stairway designs in Palace Cuto in the Bagheria near Palermo and the beautiful double stairway in the Benedictine Abbey at Catania (Fig. 170).

Cosimo Morelli also attempted in Palace Braschi in Rome (1790) to place free unrestraint instead of feeling (Fig. 171). What is there striven for in the lower stories is again emphasized by the stiff forms above. A plan with three flights and two landings with open well hole was now finally preferred. Through the great Genoese plans exhibit a middle common flight, from which men turn to left and right to the longer sides of the court arcades. These double stairways were also adopted in other places in Italy, where it was desired to do something different in accenting the design and to go beyond the ordinary measure of the essential, as shown in the beautiful double stairway in the Brera at Milan. With Spanish grandeur appears the stairway in four flights by Bernini in Palace Barberini, and the pompous double stairway of Fuga in Palace Corsini at Rome (Fig. 172), but especially and a grander way the stairway of Vanvitelli with three flights in the Palace at Caserta. Majesty from floor to ceiling! (See plan of the Palace in Section XX a). In its basal lines the greatest simplicity in unsurpassed decoration by costly marbles.

Here also comes the stair halls in Palace Reale and in Museum Nazionale at Naples, in the Palaces at Turin etc.; nearly all of later date, yet also of a great style.

The stair hall of the Barocco period increased to the most important and architecturally most prominent room, far beyond the requirements, and this not alone in Italy, but even in a higher degree in France and Germany (Bruchsal, Würzburg, Mannheim, Brühl etc.), where it expressed the courtly magnificence and authority of the occupant. In the beginning only satisfying the needs, it developed in the course of the Renaissance period, according to the changed demands in dwelling and in life, to the highest artistic impulse in an architectural work.

"Whatever in Venice makes some impression in the interiors of the palaces -- stairways and halls -- is of later origin. Man was neither the master contented with the place, nor assured of a firm soil." This expression of J. Burckhardt I can-

cannot entirely escape. A court with the Scala del Giganti and the Scala d'oro (1577), such as Palazzo Doga in Venice possess, one will seek in vain in the rest of Italy. Likewise as its size of about 21,500 sq. ft. (of the court) allows the feeling of limitation of space to scarcely appear (?). The courts of the Florentine palaces (Palazzi, Palazzo, Montorio, not including the porticos, have areas of 1577.8 -- 1591.7 -- 2260.6 sq. ft.; the court of the Cancelleria in Rome has 7104.4 sq. ft. whereas four palace courts in Cassara together have 4 x 480, or in round numbers about 21,500 sq. ft., or save as Palazzo Doga. According to these statements the space is not restricted in Venice. The court of Palazzo Grimani measures 17000 sq. ft. (1577.8 sq. ft. in round numbers) and is not open at all.

Plans with their courts and stairway designs and their architectural development seek their equals in the world.

The stairway in Palazzo Gritti at Venice returns to the plan with two branches and a landing after the Florentine style, and is not of later origin. The development of the space forms a beautiful stairway plan in three branches, where space is also not wasted. (See plan in Section XVII; Monastery and Palazzo Gritti).

Venice has a peculiarity in its winding stairway towers which enclose together. An entirely similar structure with enclosing stairways, belonging here, in style corresponding to the Florentine structure of Venice, is shown by the Scala del Giganti. (15th century, fig. 173).

The architectural questions, the railways as the open lines of the lines of stairs almost entirely consist of bars and rails and for setting on the ground. In fact each one either like a staircase, or are connected similarly from the stairs upward and downward. A magnificent example is presented by Palazzo Gritti at Florence. (fig. 179). In Palazzo Gritti at Florence, the railing consists of decorated stone slabs (fig. 174), at the Scala del Giganti in Venice of white marble slabs, that are again animated by initial signs of various

cannot entirely endorse. A court with the Scala dei Giganti and the Scala d'Oro (1577), such as Palace Doge in Venice possesses, one will seek in vain in the rest of Italy. Likewise its size of about 21,529 sq. ft. (of the court) allows the feeling of limitation of space to scarcely appear (?). The courts of the Florentine palaces Strozzi, Riccardi, Nonfinito, not including the porticos, have areas of 1937.6 -- 1291.7 -- 2260.6 sq. ft.; the court of the Cancellaria in Rome has 7104.4 sq. ft. area. The four palace courts in Caserta together have 4×480 , or in round numbers about 21,529 sq. ft., or same as Palace Doge. According to these statements the space is not restricted in Venice. The court of Palace Grimani measures 1722.3 sq. ft., that in Palace Cornaro 2260.5, including the great open atrium.

Therefore one must admit, that the Roman palace and house plans with their courts and stairway designs and their architectural development seek their equals in the world.

The stairway in Palace Cornari at Venice returns to the plan with two branches and a landing after the Florentine style, and is not of later origin. The Brotherhood di S. Rocco exhibits a beautiful stairway plan in three branches, where space is also not spared. (See plan in Section XXVII; Monastery and Brotherhood Buildings).

Venice has a peculiarity in its winding stairway towers with enclosing loggias. An entirely annular structure with enclosing arcades, belonging here, in style approximating to the Romanesque architecture of Venice, is shown by the Scala Minelli. (15th century, Fig. 173).

The architectural protections, the railings at the open sides of the flights of stairs almost entirely consist of balusters set vertically with triangular additions to receive the hand rails and for setting on the strings. In form they are either like candelabras, or are treated similarly from the middle upward and downward. A magnificent example is presented by Palace Gondi at Florence. (Fig. 179). In Palace Guadagni at Florence, the railing consists of decorated stone slabs (Fig. 174), at the Scala dei Giganti in Venice of white marble slabs, that are again animated by inlaid slabs of variegated marble.

The hand rails on the balustrades by Sanmicheli in Verona have a round besides the cornice mouldings, where the round extending along the enclosing hall is separated from the masonry by a cove (Figs. 175 a, b). Simple railings of wrought iron bars are indeed usual, but rich works in the taste of the French state stairways are rare; carved wooden stairs in the fashion of the English are unknown to me. (See also the wall band in the City Hall at Siena).

99. Free Stairways.

Architecturally of importance are still the free stairways in the interiors and on the exteriors of public buildings. They impart a particularly proud stamp and a public character to the structures. To be mentioned are the capricious free stairway in the vestibule to the Lorenzian Library in Florence, the straight, earnest and grandly effective stairway dei Giganti in the court of Palace Doge, the noble flight of steps to the Palace Capitol in Rome with its statues (Fig. 181), the design in the court della Pigna in the Vatican. In the designs of Roman and Genoese villas they play the greatest part (see the Section on Villas, also then that on Palaces, where much additional is given.). Further are to be mentioned here the mighty connecting flights of steps joining the higher with the lower parts of cities, for example Monte Pincio with Place di Spagna in Rome. (See Letarouilly).

100. Admission of Light.

The admission of light in designs of enclosed stairways is by high side lights (Genoa), by skylights (Rome), or from the landing by windows, which lie on the court or street facades, or directly from the courts themselves. (Figs. 176, 177, 178, 179, 180).

The question of admission of light is solved in an interesting way by Sangallo in the frequently mentioned Palace Farnese in Rome. The main stairway indeed lies there next the external wall of the street facade, but its light is received from a small court of 753.5 sq. ft. area, which again takes its daylight from the windows on the street. Thus the symmetry of the street facade is not disturbed, or the windows are not intersected by the flight of steps (Fig. 161). On a smaller scale, but even better solved is the question in Palace

287 Palma in Rome, as shown by Fig. 180, and also in Palace Muti Papazzuri, where passage and stairway are served by the same source of light in the small court. (Also see Letarouilly, Rome Moderne, Vols. 1, 2).

In closing this Section, there should be given the flights of steps before the Palace at Caprarola, one of the grandest designs before a palace structure (Fig. 182) and one of the mightiest, that Italy has to show, harmonizing with the construction of similar works in this domain, and that must be so described.

Section XI. Columnar Orders and Architectural Details connected with them.

"Whoever throws off the restraint of the columnar orders, must create for himself another canon instead, or directly disown the characteristic and subjective expression in architecture, to adjudge to it only the right of a general and typical meaning. Whoever knows no restraint, his art falls into formless and meaningless caprice. The presumptive inventor of a new canon at the best would finally have only deceived himself, and not have changed the nature of the old. Yet had he succeeded in the latter, then would he have won favor for the exclusive possession of his art; for no one except himself would so quickly understand it. Herein architecture shows itself as inflexibly conservative as music.

Semper. *Der Stil*. Vol. 2. p. 372. (1).

101. Survey.

The circle of architectural forms within which the Renaissance in Italy moved, the architectural language in which it speaks to us, is not so strictly limited as many amateurs and writers on art of today would gladly have themselves and others believe, and in apology for them it may also be said, that the expression of form is a "borrowed" one and not so important. Everything is borrowed finally, even when this is from highly esteemed mother Nature; one stands on the shoulders of another in art and in methods; but the most modern men of all speak of the "beaten paths" of the Renaissance, and so it may well be said, that only the fewest of these have become main roads, and others cannot at present be traveled by all without exception. Paths followed by an Alberti, Brunellesco, Leonardo or Michelangelo, artists in whom we honor the highest flower of intellect and of power of artistic creation, given to us by a gracious Providence, are not to be mistreated by artist cliques and their bards, and also not by those who regard art as a fancy, and a cow to be milked, frequently against their better knowledge in order to arouse attention. And when a later period asks for the names of such heaven-storming heroes, which desires to find some fault with the mighty men of the Cinquecento (14th century), then any one may say with Romeau's Nephew:-- "Hem! Grimm! Grimm! who was Grimm? Ah! He was once assailed by Rousseau!" 77

Note 77. See Brachvogel, A. E. Narciss. A tragedy. 7 th edition. p. 15. Jena.

What Semper in his "Stil" as a foreboding feared for the maintenance of the Italian Renaissance has been in part fulfilled; "before it, which remains unsurpassed in the same degree with the painting and sculpture of the 14 th century, there lies the danger, that it may only be executed by truly a artistic hands, but by the bungler's work required today, it will at once degenerate into the most trivial vulgarity of forms." -- Literary men have built the ways, the people have heard the call, and the artists suffer the consequences!

Whoever can and will see and understand, will soon convince himself, that the masters of the Renaissance were no thoughtless repeaters of the antique in any definite time, not even in details, that even at the beginning they did not understand how to judge of the value of these. Also the detail forms of their structures are never entirely antique; many of them are still permeated by the Northern spirit of Gothic. For example, the window sill belts of the Tuscan palaces are anything else than severely antique in profile; even the details of the inspired Alberti, rich in knowledge of art, are not so on his Palace Rucellai. The former still show on the cornices mediaeval details, on the latter neither the capitals nor the bases of the pilasters on the ground story are of purely Roman form. Likewise the arrangement of the main cornice on Palace Strozzi is not strictly Roman, since the architrave is wanting beneath the frieze, shrunk to an astragal, a and more of the same.

But these were not accidental occurrences, they were alone possible on the basis of thorough preceding study of the antique, without which they would not have been able to create anything new, which again only became possible, since beside the formalism they sought to solve the structural nature of Roman architecture with its grand works in the domain of vaulted construction. The latter must have especially attracted them, as also the great deed of Barocco proves; and to such a free conception and novel treatment of forms would Formigini have never attained in his splendid capitals in Bologna, unless these had not been preceded by thorough studies of the antique.

102. Columnar Orders.

This study is attested by the measured drawings of ancient architectural monuments preserved to us, and by the system based upon these. All masters, from the joint founders of the Renaissance in Italy, the learned and highly cultured architect Alberti to the theorists Vignola, Scamozzi etc., occupied themselves with the so-called columnar orders and established their canon. Alberti busied himself with them in his work "dell'Architettura" (Book VI, Chap. 13; VIII, Chap. 9 et seq.), and thoroughly expresses himself there concerning the swelling of the shafts of the columns, for the execution of which he also gave the rule (Fig. 185). In a more comprehensive manner he treated the orders in general in his writings on the five columnar orders. ⁷⁹

Note 78. "Swelled, because it seems in some places that the column is somewhat enlarged."

Note 79. Leon Battista Alberti's minor writings on the history of art, published in the original text, translated, explained and supplied with notes by H. Janitschek. Vienna. 1877.

103. Swelling the Shafts of Columns.

The Notes of Alberti according to Janitschek's excellent translation follow here verbatim, which makes the addition of suitable graphical representations appear superfluous, and also these must be assumed to be known to architectural students and graduates. Serlio, ⁸⁰ Vignola, Palladio, Normand, J. Bühlmann and others, it may be incidentally stated, have sufficiently endeavored to make them known by their textbooks, and the technical and polytechnic schools further take care, that this sound material of instruction may not pass into oblivion. "Littera scripta manet," the printed word will remain and will not as easily disappear as the explanatory drawings therefor, as Vitruvius and Alberti experienced in their own lifetimes.

Note 80. Serlio, Book IV on the five forms of these edifices; Tuscan, Doric, Ionic, Corinthian and Composite.

234 For the Ionic volute capital, the Corinthian and the Composite corolla or bell-shaped capital, on the basis of the study and measurements of antique specimens, by the Renaissance masters were given definite rules for their forms, which are

made clear and effective in the following.

1. Five Orders of Columns.

(The five architectural orders).

a. The Tuscan Order. -- Although Vitruvius treats of the Tuscan order in his fourth Book after all the others, it still appears to me proper, when all four orders are allied in the building, to remove from its displacement the one, that is firmest and possesses the greatest supporting power, and to first treat of it.

1. The shaft of the column. -- The Tuscan column must have six diameters, for which is always taken the diameter of the lower end of the shaft.

2. The base is always made one third of the diameter of the column. This (height) is halved; one half goes for the plinth; the other half is again divided in three parts; two thirds of this falls to the lower torus, the rest to the band (apophysis) at the lower end of the shaft.

3. The capital. -- The height of the capital is made equal to half the diameter of the lower end of the shaft; the projection equals the lower diameter of the column. The entire height of the capital is divided into three parts; one part gives the abacus, another is the echinus with the astragal--where again the astragal occupies one sixth of this part; the rest falls to the necking; the moulding (astragal) with the fillet has half the necking; divided in three parts, two fall to the astragal and the rest to the fillet. The upper end of the shaft of the column is to be divided into six parts; if one then takes away one part each at right and left, then the column will afterward diminish in the proper manner.

4. The architrave. -- The height of the architrave equals the diameter of the upper end of the shaft, the taenia occupies the sixth part of the architrave.

5. The Frieze is the same size as the architrave.

6. The cornice is likewise divided in four parts; of these one part falls to the echinus, another to the fascia, the two remaining parts to the crown moulding; its projection equals its height.

7. The projection of the base is determined in the manner, that in case a square is placed around the lower end of the

shaft of the column, and a circle is described through the extreme angles thereof; this gives the projection of the base.

The pedestal is in height (?) equal to the projection of the base; to this is added a fascia above and below, which then has a suitable proportion, if it has the fourth part of the said height.

b. The Doric order. -- The Doric order is to be retained in the following manner. First the column is divided into 14 modules; one module gives the base; another falls to the capital.

1. The base is divided in three parts; one part falls to the plinth; the two other parts are divided in four parts, one such part comes to the upper torus; the three remaining parts are halved; one half gives the scotia with its fillet; the other half gives the lower torus. -- Its projection will be the same as in the Tuscan order.

2. The capital. The height of the capital is divided by three; one part gives the abacus with the cymatium, where the cymatium should have one third of the abacus; the second part is devoted to the echinus with the beads, and indeed two thirds fall to the echinus, the other third to the beads, of which there are three just alike, the last third of the capital will be the necking. The astragal with fillet will have one twelfth the diameter of the column, which latter amounts to two modules. The astragal is divided in three parts; two thirds fall to the astragal, the remainder to the round. The projection will be as great as the diameter of the shaft at the lower end.

3. The diminution of the column. -- The column must diminish by one sixth; thus on each side in the circumference by one twelfth; there the same procedure is observed as for the Tuscan order.

4. The architrave. -- Above the column will the architrave be made one module in height; the taenia of the same will have the sixth part of a modulus; the drops with their regula will have a fourth of the architrave. Divide the (height) of the drops with the regula in four parts, then three parts fall to the drops, the fourth part to the regula; there one takes care that six drops are required. On the architrave are

set the triglyphs; they have a height of $1 \frac{1}{2}$ modules; between each two triglyphs is found a space which is equal to the height of the triglyphs; in this space, which is termed metope, are found heads of bulls and rosettes. The caps of the triglyphs amounts to the sixth part of a module.

5. The cornice. -- Above the triglyphs is placed the cornice, which has a height of one module, in which height also falls the cap of the triglyphs. The remainder which is then left over is divided in two parts; one part falls to the cyma with its band, the other part to the corona with the echinus beneath, which said lower echinus will have one third of the cyma and of the corona. The projection will be equal to the height of the cornice and beyond this so much as the upper cyma projects beyond the corona.

6. The pedestal will be made as wide as the base and $1 \frac{1}{2}$ times as high as it is broad without the upper and lower mouldings. The said stylobate will one divide in five parts, and will make the upper and lower mouldings just as great as one of the said parts. The upper moulding is then divided in four parts; two parts thereof serve for the cymatium, another part for its moulding, and the fourth part for the astragal with its fillet. The lower moulding is divided in three parts; one third falls to the upper torus with the fillet, the two other thirds to the lower torus. The projection will be as great as the cymatium is high. The plinth beneath the pedestal is not included herein, but it is left to the preference of the architect.

Book VII, Chapter 7 of the Alberti bears the title; "Of the Capitals, Doric, Ionic, Corinthian and Tuscan." On Plate 25 of the edition of Gosimo Bartoli (Bologna, 1782) is reproduced the Doric capital in two different modes, that substantially differ from the conception of Vignola, while showing definite Roman examples. Before all things, it is drawn with much less projection, than in the examples given by Vignola.

C. The Ionic Order.

1. The shaft of the Ionic column. The shaft of the Ionic column must count eight lower diameters.

2. The base will be as high as this is the case in the Doric order. To the plinth falls one third (of this height);

the rest is divided in seven parts; of three parts thereof one makes the upper torus, of the remainder the scotia with its astragals and fillets. The projection will be as on the Tuscan base. The shaft will diminish as in the Doric order.

3. The capital is made a third of the lower diameter of the shaft in height, but the volutes may hang down so far as amounts to half the diameter.

237 4. The architrave. The height of the architrave has to be one twelfth of the height of the column; of this one sixth of the said height falls to the cymatium. The remainder one divides in twelve parts; three of these fall to the first band, 238 four parts to the second and five parts to the third.

5. The frieze. If the frieze is furnished with sculptures, then one makes it a fourth higher than the architrave is; if it lacks the sculptures, then one makes it about one fourth lower than the architrave is.

6. The cornice. Above the frieze will one make the cymatium, and its height will amount to a sixth of the height of the frieze; above the cymatium one makes the dentils (denticuli, calves' teeth), and just as high as the middle band of the architrave is; above the dentils is found the cyma with its fillet of equal height. The projection of the entire cornice will be equal to the height of the same.

7. The pedestal. The height of the pedestal one makes equal to the distance from the bottom of the base to the beginning of the diminution of the column. The said pedestal is divided in eight parts, one of these falls to the lower moulding and one to the upper moulding.

8. The flutes. If the column is furnished with flutes, then will it possess them to the number of twenty, and indeed the flute is three times as wide as the fillet.

9. The volute with the cymatium one divides in nine and a half parts; of these one and a half fall to the cymatium; of the eight remaining parts one makes the volute. The eye of the volute will one place in the middle of this height (thus in the four), and when one extends the circle to the extreme parts above and below, one obtains the projection of the said volute.

The Ionic capital of Alberti substantially coincides with that of Vignola; except that the one first named has a higher

abacus; also the scrolling at the eye of the volute is richer by one turn; Vignola further gives a construction of the volute, which we add in Fig. 185.

D. The Corinthian Order.

1. The shaft of the column. The Corinthian column will one make nine heads high; one of these heads will fall to the capital.

2. The base. One makes the base of half a head; the remainder will fall to the shaft, as stated for the Ionic column. The plinth of the base will one make the fourth part of the height of the said base; the remainder will one again divide in four parts; one of these will serve for the lower torus, the three other parts one divides anew into four parts, of which one falls to the upper torus, the three remaining parts one again divides in like manner and makes of them the two scotias and the astragals, as this was stated in the Ionic order.

3. The capital will one make in the following way. The abacus will have the sixth part of the height of the same; the cymatium has one third of the height of the abacus. The band of the bell amounts to a ninth of the remainder of the height of the capital. The bell will one divide in three parts; two of these will serve for the foliage, the third for the volutes. The projection of the abacus must be so great, that it stands vertically over the plinth of the base. The upper astragal with its fillet will be as great as is the projection of the column.

4. The architrave will be as the Ionic, excepting the astragal or round, which is the eighth part of the band belonging thereto.

5. The frieze will be made as in the Ionic order; yet will it lack the sculptures, if it be not also a piece higher.

6. The cornice will be similar to the Ionic, excepting the echinus, and indeed it will be by so much higher (than the Ionic cornice), as amounts to the height of the echinus, for which latter is required the measure of the middle band.

239 7. The pedestal is just as high as the distance from the beginning of the base to the end of the swelling of the same, as this was explained for the Ionic order.

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The Corinthian capital of Alberti perfectly coincides with that of Vignola, who also adds here the construction of the same (Fig. 186).

B. The Latin (Composite) Order.

1. Shaft and base. The Latin order was composed and arranged by the ancient Romans. Since these desired to form a kind of columns, which should be more slender than the Corinthian, they made the column -- capital and base included -- ten heads high. The base may one make according to the preference of the architect, similar to the Ionic or Corinthian base.

2. The capital is subdivided in the following manner. Its abacus will be like that of the Corinthian order; the volutes are like the Ionic; the foliage is similar to the Corinthian, and the columns diminish like the other orders.

3. The architrave is as high as the size of the lower diameter of the column; it is divided like the Ionic.

4. The frieze. If consoles exist, the frieze is made of the same height as the architrave.

5. The cornice. The cymatium of the modillions has the sixth part of their height; the width of the console will be equal to the lower diameter of the column, i.e., if it stands at a great height; if its distance from the eye were less, its width must receive a fourth part less. And at least must the distance between two consoles be equal to one and one half modules, indeed even more, since they then appear more slender to the eye. Its fascia with the cymatium must be as high as the size of the lower diameter of the column; if one divides this height in two equal parts, then one part falls to the fascia, the other part to the cymatium; the fascia will have a projection, which is equal to the height of a console, and the cymatium one equal to its own height.

6. The pedestal. The pedestal will be so made, as it was explained for the Ionic and Corinthian orders, i.e., its height made equal to the distance from bottom of base to the beginning of the diminution of the column.

The Composite capital of Alberti, which in his misunderstandings he designates as "Latin", likewise coincides with that of Vignola, who also gives the construction of the capital. (Fig. 137). A drawing of the Tuscan capital is only given by

Vignola; it is wanting in Alberti.

242 But besides these strict forms antique art already offered capricious forms of the most diverse kinds, and just the so-called decadent period here exhibits new types of frequently the most original sort, such as capitals in Eleusis, Rome and other places. ⁸¹ However much the masters also measured, discovered and theoretically derived from the ancient monuments, they did not stop there, and scarcely one reproduced intact, what the antique had brought him. As persons of intellect and taste, they did not always give without change what had been received; that adopted was much rather worked over in spirit, and that useful application derived from it, which astonishes us in their works.

Note 81. See Durm, Dr. J. die Baukunst der Griechen. 3rd edition. Part II. Vol. 1 of this Handbuch. Also die Baukunst der Etrusker und Römer. 2nd edition. Vol. 2 of this Handbuch.

No attempts to reanimate the ancient forms saved from the storms of time are met with here; new life springs from what has been transmitted from the fountain of the ever beautiful, disturbed for a brief space of time.

104. Free Doric Capitals.

With the ^{strictly} ~~generally~~ treated Doric capital of the Greeks, the Romans already knew of nothing more to do. The Renaissance succeeded not much better, as shown by our various illustrations. At most they created an overloading with members and a superfluous ornamentation. Even the two great masters, Bramante and Raphael, uncle and nephew, did not advance further in the mighty structures of the Cancellaria and of Palace Pandolphini. Others contented themselves with the ornamentation of the echinus by egg and bead mouldings, with the simple decoration of the abacus by leaf mouldings, and with the decoration of the underside of the projecting triangle, with the ornamentation of the necking by acanthus leaves (Fig. 184).

105. Free Ionic Capitals.

With similar external features must also likewise the Ionic capital content itself, which were sometimes more or less awkward, sometimes refined in application. The volute scrolls decorated by leaves after antique Roman models, the necking

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156. The Corinthian Capital.

The Corinthian capital of the Renaissance for great and a
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members beset by acanthus leaves reappear, as shown by the examples of Fig. 188; Figs. 189, 190 and 191 with volutes turned downwards recall their precursors in Phigalia and Ephesus. The experiments of Michelangelo with Ionic capitals on Palace Conservators in Rome is indeed somewhat powerful, but yet eccentric in its curves and accessories (Fig. 185).

106. Free Corinthian Capitals.

The Corinthian capitals of the Renaissance for great and early buildings are direct imitations of antique Roman. On the Triumphal Arch of Alfonso in Naples is indeed such a most fortunate one. (See comparison of examples in Fig. 192). Less happy is Brunellesco in his detail forms, which further with him and other masters depend much on the kind of material. (Marble, sandstone, bronze). Particularly if the carving of the acanthus leaves frequently suffers there. Men can execute much in marble and bronze, that must be omitted in sandstone or porous limestone. Compare the leaf sculpture on the Corinthian capitals in S. Spirito in Florence with that of the sacristy of S. Felicita or that of the bronze capitals ²⁴⁴ on the atrium near S. Celso by Polcebuono. In one place it is clumsy and awkward, recalling the late Roman cabbage leaves, at the other fine and narrow, reminding one of small olive leaves. The same is found in the volutes with scrolls turned outward. (See S. Spirito and the Basilica S. Lorenzo, as well as Fig. 192).

107. Composite Capital.

Likewise the Composite capital shows in many cases and just with the highest masters a direct copy of antique Roman models. Thus for example in the Palace courts of Urbino and Gubbio the capitals of the columns are faithful imitations of capitals from S. Maria in Cosmedin or of others lying in the ruins of the imperial palaces or at the Baths of Caracalla. None less than Laurana has done this, and this procedure is also proved for Polcebuono, and the architects of the succeeding time make no concealment thereof, as may be seen in Palace Uguccioni, on Mercato Nuovo at Florence etc. (Figs. 193, 194⁸²).

Note 82. Likewise O. Rudinich calls attention to this procedure in his Treatise on Palazzo Ducale at Urbino. It is sin-

...that the composite capital occurs in the earliest time of the Renaissance (1450), and that thus the latest form of the antique capital become the first of the Italian Renaissance.

...

A freer and very much simpler form of the Composite capital of the Renaissance is developed in the columns of the columnar court of S. Maria Novella in Florence (1545). In the first case, the capital consisted of a fluted capital which is crowned by an acanthus leaf and each leaf is surrounded by the volutes, that correspond to the four angles of the square, and develop foliate expanding downward and outward. The form of capital is very and peculiar, and it is not designated as Doric with Composite volutes; another Composite capital, which was mentioned with Ionic capitals, growing out of a fluted bell form. The Ionic mode of expression predominant in the Renaissance.

Now appear on columns, piers and pilasters other forms of capitals, which belong to the most pleasing types of the Renaissance in all provinces of Italy, and which may be termed as modified Corinthian or Composite capitals. For even these are of antique origin from antiquity and various capitals (1545). 340, 410 in Uffizi's Catalogue der Gipsabgüsse, 2nd edition, were indicated from the nearly similar Roman forms. The first for the latter are in the Berlin Museum under No. 1035, and complete 7 small capitals of white marble with variations of stone from Rome. These were also indicated in the year 1898 according to my sketch. I mentioned the other in 1895 in the British Museum in London. It was the No. 2850 and was likewise a little different, and from the Pantheon in Rome.

(Plate 10, fig. 11.)

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From these capitals an abundance of variations on the one side of the ancient Ionic capital or Doric capital, on which the bodies of all times have made experiments with more or less skill, as well as on its transition into the fluted Composite capital. The middle ages found this antique motive just as religious as the Renaissance; but the latter added a greater freedom, greater diversity of their means of ornamentation.

singular, that the Composite capital occurs in the earliest time of the Renaissance (1468), and that thus the latest form of the antique capital became the first of the Italian Renaissance.

A freer but very much simpler form of the Composite capitals of the Renaissance is developed in the capitals of the columnar court of S. Maria Novella in Florence (Fig. 195). In the first case, the capital consisting of a fluted cylindrical portion is crowned by an echinus with egg and bead mouldings springing from the volutes, that correspond to the four angles of the abacus, and develop foliage expanding downward and outward. The form of capital is new and peculiar, and it might be designated as Doric with Composite volutes; another at Poggio a Cajano, which was mentioned with Ionic capitals, bears angle volutes ornamented by large rosettes, growing out of a fluted bell form. The Ionic mode of expression predominates there.

Now appear on columns, piers and pilasters other forms of capitals, which belong to the most pleasing types of the Renaissance in all provinces of Italy, and which may be termed *Simplified Corinthian or Composite capitals*. But even these are of antique origin from Antikyra and Megara-Hyblea (Figs. 340, 310 in *Durm's Baukunst der Griechen*, 3rd edition), or were imitated from the nearly similar Roman forms. The proofs for the latter are in the Berlin Museum under No. 1003, and comprise 7 small pilasters of white marble with variegated stone from Rome. Thus they were designated in the year 1906 according to my sketch. I sketched the other in 1905 in the British Museum in London. It bore the No. 2590 and was likewise a little pilaster, but from the Pantheon in Rome. (Figs. 196 a, b).

108. Corinthian and Composite Capitals.

From these originate an abundance of variations on the theme of the ancient Egyptian bell or corolla capital, on which the peoples of all times have made experiments with more or less skill, as well as on its translation into the flat on a pilaster capital. The middle ages tried this antique motive just as zealously as the Renaissance; but the latter added greater freedom, greater diversity of their means of ornament-

ornamentation, and particularly a far excelling refinement in the treatment of the details. In conventionalized or naturalistic foliage appear human figures; with these alternate heads, animal forms, emblems etc.; pleasure and pride, combined with exuberant fancy contest thereon in the ornamentation of this form of capital, and here appears the originality and mastery, gracefulness and the sense of beauty of the Renaissance masters in their highest development.

From these variations may be gathered easily three ground motives; that with volutes scrolled upwards, that with them turned downward, and that with them greatly extended below. (Fig. 197).

The earlier solutions mostly show the volutes extending deeply and the elongated bell. (Genoa, Pesaro, Villa Imperiale). But instead of the volutes also appear cupids, animal forms (dolphins), cornucopias and vases with flowers and fruits, (Fig. 198), shields of arms etc.

Particularly beautiful objects of this kind, of terra cotta, sandstone and marble, are to be found in Bologna on churches and palaces, in Ferrara (Palace del Ludovico Moro, Palace dei Diamanti, in the court), in Brescia, in Milan, Pavia, Florence etc. They are frequently designated as designs of Bramante, while they were already common property before his appearance. A splendid voucher for this are the capitals of Chapel Colleoni at Bergamo, which also further have the ornamented necking (Fig. 199 a).

In a perfect sculptor's feeling the bronze capital is conceived on the external pulpit at Prato with cupids and little figures (Fig. 200 c), and for a beautiful example of a pilaster capital may pass that designed by Serlio (Fig. 200 c) and also as a good example from the early time, that from Bologna, (Figs. 200 a, b), and another from the Sforza epoch in Milan. (Fig. 201).

109. Shafts of Columns, Piers and Pilasters.

What is true of the capitals must likewise be taken into consideration for the bases and shafts of columns, piers and pilasters, as well as for the entablature lying thereon. In all parts pulsed a fresh life, and appeared the endeavor to create new things in the ancient spirit, but no revival of faded flowers.

about position by two Renaissance: parts of square, rectangular and occasional cases section, half, three-quarter and complete columns, the pier frequently diminished (Solomon). columns diminished with the use of omission of swelling were employed in construction, when the angle of piece, columns and pilasters were left plain or were fluted in the sections, corresponding to the orders, with or without inserted angles, the surfaces ornamented by foliage (Palace Vecchio in Florence), or the flutes were twisted spirally (Palace Rezzonico in Venice).

110. Ionic Columns.

For other columns the capitals only extend through the lower half of the shaft, while the upper portion is covered by an acanthus foliage and candelabra in the relief. (Court of Palazzo Rezzonico in Bologna). On others again the lower part is adorned by small flutes and festoons (School di S. Marco in Venice), or the shafts are interrupted by narrow vertical bands, most varied in form and cutting (fig. 208; Court of Palazzo Pitti), or fluted like masonry with square joints (fig. 208; Palazzo Farnese in Rome), or the columns bear angular moulds, like those of the Doric transition style (Palazzo Bevilacqua now Palazzo in Bologna), where the base flutings are also of octagonal form.

Yet other columns possess bases on the shafts, that are repeated in contour form near the capital; others show them as naturalistic garlands of leaves loosely laid on the shafts (School of S. Maria della Grazie in Milan, School S. Rocco in Venice).

A group of trees with crooked trunks are treated some the way of columns in the Court of S. Ambrogio in Milan, recalling the late Gothic. Ornaments in the window enclosures of Palazzo Quirinale in Florence, on whose origin and importance Meyer gives interesting conclusions in the book mentioned below.

... 11. Note 1. ... of columns, that in height are composed of ... the shaft and fluted or caped drums, and found in the Court

All anciently known forms of free supports were adopted without hesitation by the Renaissance; piers of square, rectangular and octagonal cross section, half, three-quarter and ¹⁴⁰complete columns, the pier frequently diminished (Bologna), columns diminished with the use or omission of swelling were employed in construction, when the shafts of piers, columns and pilasters were left plain or were fluted in the antique sense, corresponding to the orders, with or without inserted cables, the surfaces ornamented by foliage (Palace Vecchio in Florence), or the flutes were twisted spirally (Palace Bevilacqua in Verona).

110. Spiral Columns.

For other columns the spirals only extend through the lower half of the stone, while the upper portion is covered by naturalistic foliage and candelabras in flat relief. (Court of Palace Buoncompagni in Bologna). On others again the lower third is adorned by small figures and festoons (School di S. Marco in Venice), or the shafts are interrupted by ashlars with bases, most varied in forms and cutting (Fig. 202; court of Palace Pitti), or treated like masonry with sunken joints (Fig. 203; Palace Fantuzzi in Bologna), or the columns bear annular rounds, like those of the German transition style (Palace Bevilacqua now Zucchesi in Bologna), where the base plinths are also of octagonal form.

Yet other columns possess bands on the shafts, that are repeated in connected form near the capital; others show them as naturalistic garlands of leaves loosely laid on the flutes (portal of S. Maria delle Grazie in Milan, School S. Rocco in Venice).

As trunks of trees with cropped limbs are treated some shafts of columns in the court of S. Ambrogio in Milan, recalling the late Gothic branch-work in the window enclosures of Palace Quaratesi in Florence, on whose origin and importance Meyer gives interesting conclusions in the book mentioned below. ⁸³

Note 83. Meyer, A. G. *Oberitalienische Frührenaissance.*

³⁴⁴ Buildings and sculptures of Lombardy. Berlin. 1903. Part 2.
³⁵⁰ p. 77. Note 1.

³⁵¹ Shafts of columns, that in height are composed of alternating plain and fluted or cabled drums, are found in the court

of the University at Turin (Fig. 205). Twisted columns were much favored in the early and late Barocco from Giulio Romano to Bernini; Vignola even gives a rule for their construction (Fig. 206). In the spiral hollows of the shaft were then frequently placed garlands; Father Pozzo (1706) even aspired to far as the so-called "sitting" columns for his altar structures (Fig. 205), incited by allied works of the Cosmati and of the middle ages. So far as the latter carried it, the loosest Barocco masters did not go out of the way to knotted shafts, in spite of the models mentioned. (Shafts of columns on Romanesque choir in Trient, Fig. 207).

G. Guarini transferred the motive of the twisted column to the flat pilaster also, there bringing his entire architecture into vacillation. This error is only tolerable when consistently carried out, when even the horizontal members are wavy, and the forms of capitals become absurdities (Fig. 209).

111. Free Supports in form like Candelabras.

Besides the accustomed conical shafts of columns, there further appear as an original form the candelabra-like supports, particularly in Upper Italy. They are of simple shape in the stairways of Genoa, where they are often heavily loaded; then rich and in a charming manner in the side aisle of S. Maria dei Miracoli in Brescia, where the shaft starts from a bell of acanthus, that is decorated above by suspended festoons.

In all cases these candelabra supports are connected with pedestals in order to appear more stable (Fig. 204).

On portals and monuments of the Early Renaissance, they remain a favorite addition, where their form and their rich ornament also appear more tolerable, than by their use as strongly loaded free supports. Sandstone (Florence), travertine (Rome), marble (Venice and Genoa), brick without stucco in Bologna and with a stucco coating (Vicenza), are the materials employed for them.

112. Paneled Pilasters.

The surfaces of pilasters were frequently paneled, the ground of the panel being filled by scrolls or grotesque ornament, (portals of Veronese palaces, Palace del Consiglio in Verona, many bolognese and Venetian buildings, Palace in Urbino etc), forms which indeed belong more to the characteristics

of woodwork in the interiors of buildings, that to those of other monumental architecture. (See the wooden pilasters from Siena in Fig. 208).

252 For the shafts of columns the stonecutting is the traditional antique, where the astragal of the capital and the fillet with cove at the base are wrought on the shaft.

The Renaissance preferred monoliths for facades, for which it also prized the great supply of such from the antique period, while the Postrenaissance and middle ages, like ancient Greece formerly, executed them with courses of single drums. Further some antique Roman columns exhibit the mediaeval practice, where the wrought fillets are wanting, as for example on the splendid shafts of columns of S. Zeno in Verona, made of red marble.

The leaves at the transition from the circular bases of the columns to the square plinth no longer occur in the best period of the Renaissance, although they were technically justifiable. (See forecourt of the principal Church in Abbiategrosso).

253 We find them transformed on the columns of the middle aisle in S. Zaccaria at Venice, where the transition from the octagonal base to the square lower plinth is arranged with consoles enclosed by leaves. But in the most beautiful way is the transition completed on the columns in the Cathedral of Castrogiovanni in Sicily, where monsters with garlands of flowers and fruits form the the transition from the Attic base to the square plinth, a work of the year 1507, according to an inscription.

113. Members supported.

254 If wooden beams rest on stone free supports, then between the supporting beam and the capital is placed a carved bracket cap after ancient Persian custom. (Persepolis, Hall of Xerxes, there already transformed into stone). Where a stone architrave is laid on them, this occurs after the antique manner. Were stone arches placed on columns, then the Renaissance brings here nothing new, but employs the three methods used in Roman antiquity for placing the arches,⁸⁴ and interposes the entire series of a Roman entablature with architrave, frieze and cornice, (S. Annunziata in Florence), or it is contented with a stunted entablature after the Byzantine cus-

custom, where it provides a plain or ornamental block with a crowning mouldings (Maddalene de'Pazzi, Hospital de'Innocenti in Florence), or it places the archivolt directly on the abacus of the capital (various monastic courts and S. Maria Novella in Florence, Cathedral in Ferrara etc.).

114. Atlantes and caryatids.

Atlantes and caryatids are exhibited as free supports by antiquity. They reappear in the Renaissance, the former chiefly as supports of balconies at the main entrances of palaces (Fig. 210, Bologna, Genoa, Cremona, Parma, Trient etc.), formed as entire figures and as hermes. Also as the richest enclosure of windows are they to be found (Milan, Verona), and as lightly clothed female supports, we see the caryatids painted in the loggias of the Vatican (Fig. 211). The antique caryatids stand free like columns, and show a certain indifference to the appearance of being compelled to ever stand immovable with a load on the head, and accommodate themselves to the unavoidable. Otherwise are those of the Renaissance, which must by weight and stress oppose the loads laid upon them. And Raphael has assigned to his female figures quite a different function, in order to allow them to appear somewhat freer. The idea of employing the human figure as a free support is everywhere the same; it reappears in all epochs. But the realization of this is entirely different from those shown by the antique. Thus here is no dull echo!

115. Enclosures of Windows and Doorways; Cornices.

For the members of the enclosures of windows and doorways, as well as for cornices, men move in the antique channels, in the early time, still in a rather uncertain and tentative manner; the broad mediaeval enclosures, that the brick architecture of Italy exhibits, frequently appear herein consciously and distinctly in the High and the Late Renaissance.

The Renaissance is rich in piquant transformed details of the antique architectural members. To mention them all would fill a book; but I must refer to some.

On cornices we often find the water drip developed artistically in a beautiful way, and indeed on an ogee crown moulding with attached leaves (doorway in the Badia in Florence); then the front of the cornice is ornamented by carved patterns

245 On the doorway mentioned and on those of Palace Vitelleschi in Corneto, also simple consoles on those of triglyph form, with incisions and drops between architrave and cap in the frieze of the great main cornice, a motive that the great Bramante executed at large scale on his cancellaria and in the charming cloister of S. Maria della Pace in Rome, which also occurs in the court of Palace Venezia in Rome, is found on the facade designs of Serlio, on Palace Fantuzzi in Bologna, and reappears on many Genoese palaces. Vignola gives a further pretty development of this motive (Fig. 212), when he combined the antique horizontally projecting volute console of the main cornice with the vertical console in the frieze.

246 The impost cap on the Arch of Septimus Severus in Rome consists of a crowning cyma, a dentil band, and of some supporting or transferring members; it thus shows the same elements in the same sequence as the window sill belts of the Florentine rusticated palaces; only the dentils are there indicated as flat and tasteless. I have attributed those window sill belts to mediaeval influences; should they not however be indeed a reproduction of this antique impost cap in flattened form, and the mediaeval allied form be not based thereon?

116. Ornament.

The ornament sometimes appears naturalistic, sometimes conventionalized, and the same is true of the figure ornament. For ornamental mouldings preference remains to egg, heart-leaf and beaded mouldings, to interwoven work, sea waves and fret patterns, with a more or less strong adherence to the antique. Bad and good lie beside each other; the severer Grecian forms had mostly disappeared. The foliage on the capitals, scrolls, garlands of flowers, leaves and fruits, panel ornaments and friezes are arranged in the execution in accordance with the material selected for them; then are they dependent on their time, on the ability and invention of the master. Foliage of terra cotta must bear a different character with regard to the peculiarity of the material, than that executed in bronze; that to be made of wood one different from that of marble, and the latter again different than if it were to be executed in sandstone. Thus one can only compose like with like, i.e., woodwork only with woodwork, stone orn-

organisms with those organisms which are... And as if we could
are the works of various ages with those of the Renaissance,
then most our attention for the first period last mentioned as
the highest conceivable. The Greek and Roman periods except-
ed, according to the wooden ceiling from Athens.

The flora, on which they based their organisms, was entirely
ly native, available and available to every one. It was
reproduced naturally or conventionally to suit the material.

the same is true of banking and animals, when there were to
be taken into the domain of architecture. In conventional-
ed ornament the Renaissance looked mostly to the antique. I

say "antique", since this is not absolutely the case, and it
also extends for itself. Thus for example, the great Italian
work on the general in the court of the Innocent in Florence

has nothing to do with the antique, and the so-called renaissance
is the carving of the leaves and ornament of the first
antique, but in what belonged to the Greek world as well as

in the best period of the Renaissance, when more available
to the leaves of some time of oak (fig. 218), than to the
first Greek mentioned. Already this occurs on the leaves of

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ornaments with stone ornaments alone etc.. And so if we compare the works of vanished ages with those of the Renaissance, then must our estimation for the art period last mentioned be the highest conceivable. The Grecian antique perhaps excepted, according to the wooden coffins from Kertch.

The flora, on which they based their ornaments, was entirely native, available and intelligible to every one. It was reproduced naturally or conventionalized to suit the material. The same is true of mankind and animals, when these were to be taken into the domain of architecture. In conventionalized ornament the Renaissance tended mostly to the antique. I say "mostly", since this is not absolutely the case, and it also creates for itself. Thus for example, the great foliage work on the capital in the court of the Innocents in Florence has nothing to do with the antique, and the so-called acanthus, in the carving of the leaves and treatment of the flat surfaces, has in what belonged to the good Roman as well as in the best period of the Renaissance, much more similarity to the leaves of some firms of oaks (Fig. 213), than to the plant growth mentioned. Already this occurs on the leaves on the Vatican Chariot, that magnificent work of Roman ornamentation, and the artist of the Sarcophagus of Tomb Marzupini in S. Croce in Florence (Fig. 214), this equally good work in the same stone, no longer gives space to the antique leaf carving of the acanthus. Comparison of the two works is interesting; both present the best of their time, and to me the work of the Romans appears more flexible than that of the Tuscans. Both follow the same ground ideas; to allow naturalistic flowers and garlands to grow out of great conventionalized foliage, to combine conventional and natural with each other! Where it is possible to work entirely in naturalistic forms, the ancients stand almost equal in comparison; nature is simply copied. The same is the case with various festoons on branches of trees on marble friezes, that are to be found in Museum Nazinale in Rome, on various fruit and flower garlands on silver vessels and on bronzes in Pompeii, Naples etc.

But when and where were more beautiful bouquets of fruits and flowers chiseled in marble, than on the pilasters of the Library in the Cathedral at Siena (Figs. 215, 216)? Where a

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are ascending flower bells, leaves and buds more finely represented than in the scrolls of the pilasters in Chapel Pellegrini at Verona? Who has better understood how to arrange in more beautifully and to treat flower garlands and wreaths more true to nature, than the Robbias on their majolicas, at least in form? Who has represented singing boys more faithfully after nature than those artists? With excelling mastery the Renaissance artists are equal in everything ever created by others in this direction. A refined observation of nature and extraordinary dexterity in conventionalizing and skilfulness in execution.

117. Naturalism in Art.

Yes, the desire for change and the longing for the mother bosom of nature, the naturalism now much discussed (but which with us smells very much of Japan), bloomed at all times, and being everywhere managed in an amateur way; but it has endured nowhere, since in art it cannot present the highest! We see it already bloom in Egypt in the time of the 6th dynasty; for whoever regards the well known figure of the crouching scribe (original in the Louvre) from the most modern standpoint, does not recognize the highest degree of naturalism? Who will dispute a refined observation of nature in the artist of the vine-leaf frieze on the so-called Alexander Sarcophagus (Fig. 217)?

The Romans knew and practised naturalism, as already shown, and in the Italian middle ages it was the Pisani, who again awakened it, inspired by antique reliefs, -- a feeling for nature aroused by the forms of the antique! Later a tendency to the antique "truth to life and soulful expression was won even at the cost of beauty and accuracy, without knowledge of creating!"

Likewise these phenomena come and go and make room for others; man works then with a knowledge of anatomy; he allows subjectivism to prevail without limit, which stands and falls with its creator, since subjectivism only produces subjectivism, whose productions in the domain of art are indeed not harmonious, but are thoroughly different.

It is a strange thing according to our views, not alone in art but quite in general, also according to our arrangements on earth -- where the good and the tried must fail to give p

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place to the new, only because change pleases?! Another course the Renaissance could not have been able to make, than the one it has already made; but perhaps we should see a spiral in its circle, that brought us a few millimetres nearer to perfection.

But as a positive truth we should deduce from these phenomena, and from what has been said, and every one that has learned to draw will justify it, "that it is easier and more convenient to reproduce nature simply as one sees it, than to first conventionalize it to adapt it to certain purposes and materials," and when von Keppler⁸⁵ recently asked the question, whether modern art, the religious-Christian art, could learn from the ancient Egyptian, he was answered as follows:-- "Certainly; for what has chiefly been lost forms the nobility and the stamp of the Egyptian; the consciousness that art is not there to give pleasure by its play, but to solve high and even the highest problems, the self-restraint and the reasonable moderation in the imitation of nature, obedience to the law of reason, to the natural laws of art, simplicity and purity, sense of truth, clear understanding coupled with depth of soul"-- to which I gladly subscribe.

Note 85. Keppler, P. W. von. *Wanderfahrten und Wallfahrten in Orient*. 1899. 3rd edition. Freiberg. p. 84.

To the words of our emperor; "Peoples of Europe, protect your holiest possessions from the yellow race" -- I give a meaning different from that purely political. To the holiest possessions also belongs our art, i.e., the art of the European nations! If now the most recent tendencies in the German empire elevate on the shield the yet still primitive art of the dying Japanese and of the Empire, there one makes an error; already once made by the "Rococo", and which may have serious consequences for us. The beautiful and beneficial forms of the Renaissance and of the antique will readily be thrown overboard, and what do we receive in their places? At first certainly nothing better! ⁸⁶

Note 86. Words in this sense well meriting consideration have recently been published by Professor C. Schick, Director of the School of Art Industries in Cassel, and also by Otto Kaemmel in Leipzig in his Essay, "Burschen heraus." (*Grenzpo-*
ten

(Grenzboten, May 31, 1900. No 22). Meanwhile many things have already changed!

118. Final Considerations.

If in Sections I to XI, there is retained what is said in part on the customary division into Protorenaissance, Transition, Early and High Renaissance, the Time of the Theorists, Barocco and Rococo, then still it is evident from the manner in which this occurs, that it concerns only the phenomena in the domain of architecture, that indeed are separated in time or from each other, but still are borne by a wave crest, that sometimes rises high and sometimes low, also finds resistance for a time, to overflow or destroy this with the greater force.

An impulse is given; the originally calm surface becomes animated; it rises into mighty wave crests, which proudly and majestically sweep along, swallow up all eddies and opposing currents, continuing in harmonious and uniform movement-- antique culture and art!

Billows and depressions are also to be found therein, the crest succeeds the hollow of the wave. But they do not vanish in the sand; they rise ever again with new force, sometimes stronger, sometimes weaker on the upper surface. The storms of the migrations of the nations lashed the waves high; but likewise quieted them again, making place for a more peaceful current. The wave crests bring us again the pearls of ancient art, at first timidly, then abundantly; deities combine them in shining forms; the again aroused souls of men, not prostrated by the storm floods, rejoice at the occurrence and give them permanent forms again, while controlling them.

266 Thus the Carlovingian epoch gathers again the fragments of ancient art, nearly destroyed in those storms, cements them together, and where this is no longer possible, creates substitutes or fashions new vessels in the spirit of the ancients. This is followed by similar endeavors in other periods; it creates there the new life, and the changed mode of living proposes new requirements and different problems to the artist, new works; but the "eternal", rooted in ancient art, exerts the architectural charm, never lost, on them likewise.

The entire Early Christian art, the art of the Cosmati, the so-called Protorenaissance, and with it all that we designate

by the collective name of "Romanesque art", are nothing more than farther phases of antique art, crests and hollows of the same waves, but which are driven over rough ground, therefore frequently making peculiar spirits. But the primitive course is formed by the changed conditions and needs of life, with which every movement must reckon.

In this sense, there is no Renaissance; also it is nothing more than a stronger wave, another phase of antique art, that for a long time was held back by a counter wave flowing from Northern France, but which, even if it at the beginning had the force to flow to the far East, yet was similarly overthrown by the ancient and stronger waves, being cast back far beyond the place of its origin.

And what did it bring to Italy? The structural and technical acquirements of concentrating the masses of a building where they had to resist a definite effect of forces, contenting itself with weaker masonry between such points of attack; it set the segmental arch in the place of the form of the round arch, and once again introduced naturalistic ornament, which Egyptians, Greeks and Romans had already tried before, but in which no advance was made beyond certain ground forms in the architectural details of the ancient world; rather were these followed step by step.

The foreign architects of the North had not grown out of the inexhaustible strength of the antique; they were compelled to transform their acquisitions in accordance with the Southern ground principles; "they abandoned the life principle of the Northern Gothic, the evolution of the church into a skeleton of forces merely striving upward for development and resolution; they substituted for this the feeling of the South for interiors and masses, that taught by them, the Italians carried still farther."

The horizontal was regarded as vanquished in the North; it remained predominant in the South, and with it the antique again continued in its ancient rights; it showed itself in the contest as the strongest, since the time of that struggle in the 15th century until the present day!

267 "It would reanimate the antique, as so many beautiful songs on the Renaissance begins; this was indeed scarcely necessary; that was ever living."

that was ever living, and that it was capable of a further development is indeed sufficiently proved by the Protorenaissance and all Romanesque architecture, its contest and victory over Northern art, and in the endeavors and works of the 15 th and 16 th centuries is celebrated only one of the highest triumphs!

The Romanesque mediaeval style is neither a stage preliminary to the Gothic, nor does it form a transition to that, rather is it the architectural expression of one of the greatest contests of the time, fought under all circumstances and conditions.

A never suppressed continuance of antique art, that also by its nature conquered its sole strongest opponent, the Gothic, at least on Italian soil, and compelled it to adapt itself to the principles, which it had understood, also to the changed requirements in public and private life with its flexible system and its eternal expression of form, that did not chill its lovers into rigid restraint, but rather permitted the freest interpretation; it is this, which may be understood as "Renaissance." It is the reechoing of the antique under changed conditions, but now and nevermore an attempt to reanimate it or a rebirth thereof!

It has always wrought in this consciousness, and also therefore has never wandered into useless and purposeless attempts at reconstruction or restoration of the works of ancient art, nor squandered means and strength for such; but it rather drew from them for its purposes, and was not shocked at robbing them, where it was possible by the aid of ancient remains to lend form and expression to a new problem.

Nothing betrays a hypocritical tendency in it; everywhere a self-conscious appearance and creation, that recognizes the high degree of its responsibility!

I must therefore agree with Kaemmel,⁸⁷ when he says:-- "Thus foreigners in Rome are frequently initiated by observing, that here the middle ages has recklessly removed or transformed the antique, and the modern period, also the mediaeval architectural structures, according to their own needs and tastes; but just in this naive procedure is expressed the discovery of an unbroken connection with the past, whose monume-

monuments never appeared to the Romans as something dead and useless, and also do not appear as objects of historical consideration and pious care. Likewise what the middle ages and the modern period have destroyed in Rome, they have always still retained the artistic tradition in their art, and as the Roman imperial period built, that we see particularly in the churches and palaces of the Renaissance, almost better than in the remains of antiquity greatly mutilated thereby."

Note 27. See *Antikes und Altchristliches in Rom. Grenzboten*. Sept. 27. 1900. No. 39. p. 620.

Sections I to XI will prepare for an understanding of the creations of the Italian Renaissance, its estimation, and what can be derived in its dominating structural ideas from the technical procedures and their preliminary stages. How frequently great formations depend on the technical possibility or execution, or are even compelled thereby, will be conceived by everyone, who has understood how to look behind the scenes. It is therefore a basal requirement to first busy one's self with technical matters and details, if one will not fall into the banal and superficial in questions of development of the style and the application of the style. Thus for example the construction of domes in antique Rome and in East Roman Byzantium, in Florence and Rome in the time of the Renaissance and their external forms, with all their advantages and defects, are results of intelligence. One must know how something originated, grew and matured, and what conditions for this were to be satisfied.

With more or less intellectual discussions of style and mode of expression in architecture not much is attained, for this easily leads to empty talk.

A division according to types of buildings cannot be avoided, for a more convenient knowledge of the change in style.

The great Jacob Burckhardt also did not go beyond this, and the most of his adherents have followed him, perhaps without later remembering this, if others did the same. Only thus can attention be directed in the simplest way to the change in affairs, the separate phases in the rise and decadence of an art movement, to the diversity of the problems, their conception and execution. Illustrations frequently tell more of

these than words!

Then further will be drawn into the scope of our consideration the secular structures, public and ecclesiastical buildings, with regard to the local mode of expression in the different materials and their characteristic appearance in Early, High and Late Renaissance. (parocco).

269.

SPECIAL PART.

A. Secular Buildings.

Section XII. Introduction. Views of Alberti and Filarete on the Position of the Architect.

"His province (that of architecture) disposes of the greatest means before all the arts; also since it employs many men and brings many utilities, it is economically of such importance, that it benefits the entire empire for the expended sacrifice of time and money."

Schultheiss, C. Bauten des Kaisers Hadrian. Hamburg. 1898. p. 13.

119. Description of the Mediaeval City.

Not only did the emperor and art-connoisseur Hadrian act on this ground principle in ancient Rome, but also the smaller rulers of the 15 th and 16 th centuries in Italy made use of it. Most having unjustly or by acts of force attained to power, they must occupy the minds externally, and internally must take care that nobles and citizens should forget, how they reached their positions, and that artists, learned men and the working classes should be kept quiet by commissions.

To this circumstance, the search for fame by elevated persons, the world owes so many beautiful things and also the good work of architecture. Building in the greater style was favored by the fact, that the nobility in Italy already from the 11 th century had placed its principal residences in the cities. If costly dwellings and palaces were not built everywhere, there was established more tasteful conditions in comparison to utilitarian structures, than anywhere else in the world at the same time.

On narrow and unattractive alleys in the North during the middle ages were ranged houses beside each other with corbelled stories, whereby air and light were admitted to the interiors in but small measure; to the living rooms themselves was given only a small height, and the dear sky light, a bright and joyous sunbeam could scarcely ever enter a living room on the front of a lower story.

A genuine and faithful representation of mediaeval houses is given to us by the Dalmatian city of Thau. There as yonder in the North are the same narrow alleys, only here beset

by dark grey and black colors of the walls and the furniture. The interior of the house, which was built in 1800, was in a very poor state of repair. The walls were covered with a thick layer of dirt and the furniture was old and worn. The house was built in a very poor style and the interior was in a very poor state of repair.

The house was built in a very poor style and the interior was in a very poor state of repair. The walls were covered with a thick layer of dirt and the furniture was old and worn. The house was built in a very poor style and the interior was in a very poor state of repair. The walls were covered with a thick layer of dirt and the furniture was old and worn. The house was built in a very poor style and the interior was in a very poor state of repair.

Every artist's hand. The house was built in a very poor style and the interior was in a very poor state of repair. The walls were covered with a thick layer of dirt and the furniture was old and worn. The house was built in a very poor style and the interior was in a very poor state of repair. The walls were covered with a thick layer of dirt and the furniture was old and worn. The house was built in a very poor style and the interior was in a very poor state of repair.

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by dark gray and flat roofed stone houses, uncomfortable in the interior, with doubtful small farm courts, chicken ladders instead of stairs, little grace with small comfort -- "curse damp holes in masonry."

The less the extent of the city, so much the more easily was it held in case of war, and so much the greater was its capacity for defense. The recognition of this fact forced the Northern Gothic to the building of tall houses, to the arrangement of narrow alleys and little public squares, and also beyond the Alps the like conditions had the same results!

"Crooked streets, sharp corners,
High roofs, twisted stairs,
Fill with justifiable pain,
Every artist's heart."--

Half in earnest, half in jest, may this mocking verse be parodied here, which the Hanover architects printed in 1862 on their festal publication (Festschrift). Only it was not alone the artist's heart, but in a higher degree the rulers of the city, who had the necessity for getting rid of these arrangements, in order to preserve their personal safety and their position in power from danger and injury.

120. Transformation of the Arrangement of the Stories.

King Ferrante of Naples made Pope Sixtus IV comprehend in 1476, that he was not the master of the city, so long as the narrow alleys, bay windows and loggias existed. With the Pope competed the greater Italian cities in making their narrow and crooked streets broad and straight, tearing down projecting structures and bay windows!

Bologna commenced in 1470 with the removal of the wooden projections before the massive houses, of which however some good examples are preserved, and are reproduced in Figs. 218, 219. (See Palace Isolani etc.). In their places appeared the vaulted arched passages, yet not to the advantage of an oppressor of the freedom of the city!

Alberti likewise advised the ruler in a city to remove the projecting structures, since from the resistance to his hirelings would be too easy. But the same Alberti further required for esthetic and practical reasons the winding curvature of the streets. -- "The city would appear larger, the houses would present

present themselves gradually and alternately to the eye, shade would never be lacking, the wind would be stopped, defense against enemies would be easier," if straight streets were avoided. He did not succeed with these views, since already before the beginning of the Renaissance, correcting the streets had been undertaken to a great extent, wherein the preference was given to a straight course. These transformations in the arrangement of the streets had as a result the permanent paving of the streets and the areas of the squares.

"For beauty, prevention of mud and dust," Florence, leader of fashion, paved its Place dei Signori (1351), Venice its P Place S. Marco (1382), Milan (1412) and Bologna (1470) their streets.

Sidewalks of slabs were arranged around churches and public buildings; Siena decorated its marketplace by travertine blocks (1513); in other cities were employed marble slabs, bricks set on edge and flat stones from rivers (river pebbles). The paving of Rome commenced under Nicholas V, where the hard and small cubical stones were preferred, with which unevenness in ground, slopes and water channels etc. could easily be executed, and these were constructed as with great slabs, with greater durability in use, than if bricks had been employed.

Everywhere appeared the endeavor to create greater squares in the cities, surrounded by airy porticos, frequently with sale booths behind them. An antique idea again revived here! How a solution must have been found, when the Renaissance entered with its architectural programme, and its masters evolved and made known laws and rules for the new architectural style, when spaciousness was also required in residences according to antique manifestations, at least what was demanded there by the dwellings of the cultured, the wealthy and the great.

121. Characteristics of the Dwelling.

Straight fronts, uniform level of all rooms of a story, omission of all neck-breaking intermediate steps, arrangement of regular corridors before the rooms, avoidance of narrow and angular passages and the expedient of winding stairs, were the characteristics of Renaissance dwellings. Alberti preferred to have all rooms on one floor and on the ground level, and the stairs were omitted, since they would only

of the ethical proportion of room, and to give numerical
all proportions for the furniture, clothing and articles.
from the architect he required, "88" that he should not know
himself at the head of everyone's head to build, he demand-
ed faith and confidence from those who claimed his assistan-
ce of advice, and then for him a suitable and not average
representation. He seemed rather to allow himself to be call-
ed on as three times, than to observe himself once. How dif-
ferent today, when architecture has become a business, and
the spirit of ornamentation and in fact ornament and material
and, who know better!

Alas! desires good suggestions for the architect, who
lacking the absence of a socialist always have an eye on the
world, so that his power may be kept pure, and not all def-
erred, that may proceed from the consciousness or expression of
others. When he may be set before the people as a person on
a word, that the architect could not consider as a person of
its magnitude as from the great character of human life, then
should he not have it as the greatest reason, and not make
something out of it, inspired by envy and imposture. Every
violation of this principle has always had the result, that
the architect has been limited by the desire to have been spoiled
inwards in composition, and have had a bad ending.

Note 88. In the architecture, Book IX, Chap. 10, (Chicago)
The architect of the great architect, at the construction of
the dome of the United States Capitol, when he rejected the model
of Vitruvius, of which Gaius said, that it was "miserable and
barbarous," and that retaining it would have saved the Pisto-
lian money and vexation. 89 Vaselet actually copied the
building in esthetic and technical respects, which represented
so far after his mistrust, and that could be preserved
only by extraordinary means.

Note 89. See the author's essay on this dome in letter 7.
Rome, 1902, p. 14.
That was said by Alcega in letters to works, that could not be
considered within the life of a man or somewhat more, or that

the stairs were omitted, since they would only confuse and injure the plan. He was the first to establish the principle of the cubical proportions of rooms, and to give numerical proportions for the lengths, breadths and heights.

From the architect he required,⁸⁸ that he should not throw himself at the head of everyone desiring to build, he demanded faith and confidence from those, who claimed his assistance or advice, and then for this a suitable and not average remuneration. He desired rather to allow himself to be called two or three times, than to obtrude himself once! How different today, when architecture has become a business, and the givers of commissions are in part energetic and hurried men, who know better!

Alberti desires good superintendents for the erection, who during the absence of the architect always have an eye on the workmen, so that his honor may be kept pure, and not all defects, that may proceed from the carelessness or unreason of others. When he may be set before the problem of carrying on a work, that the designer could not complete on account of its magnitude or from the brief duration of human life, then should he continue it as the designer desired, and not make something new of it, inspired by envy and impetuosity. Every violation of this principle has always had the result, that all buildings not completed by the designer have been spoiled afterwards in composition, and have made a bad ending.

Note 88. In *De Architettura*. Book IX, Chap. 10. (Italian)

These words were recalled to the great Pistojesse architect the great Pistojesse architect Lafri, at the construction of the dome of the Umlta in Pistoja, when he rejected the model of Vittoni, of which Lafri said, that it was "graceful and beautiful," and that retaining it would have saved the Pistojesse much money and vexation.⁸⁹ Vasari actually spoiled the building in esthetic and technical respects, which threatened to fall after his mistreatment, and that could be preserved only by extraordinary means.

Note 89. See the Author's Essay on this dome in *Zeits. f. Bauw.* 1902. p. 14.

What was said by Alberti refers to works, that could not be completed within the life of a man or somewhat more, or that

For other persons remained unfinished, and whose completion

continued an unavailing necessity, and not to sentimental

works of restoration or the rebuilding of the half destroyed

works of their ancestors. In spite of all sympathy for the

Antique, there was in that time no greater plea or any other

great adviser, to entrust an artist therewith, to restore and

in a building in the so-called spirit of the original or on

the basis of doubtful ruins. Their inspirations remained pro-

duced on paper, and good money was squandered on them on other

people for strange whims. The knowledge derived from the

ancient works was utilized in practical and practical ways, a

such as the new life furnished. Not to satisfy curiosity and

self-interest, for no renown would be gained by such undertak-

ings, according to the ideas of the time -- would one make a

the ancient needs of ruins live again, but men still less ho-

sted to destroy their charm, or to rob them of historical in-

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188. Preservation of Monuments.

Man would sometimes make a list of the ruins or a temple in-

to a Christian church, which was still beautiful; but they did

not create for their purposes and senseless new buildings

in the ancient style, which indeed would not differ from what

comes from the hands of our modern architects, with their in-

ter for rebuilding churches, palaces and castles under the

pretence of the so-called preservation of the monument.

Man generally allowed these to fall into ruin, which would

be preserved no longer, and then did not think them for the

air purposes; for others was preserved what remained, but no

historical value.

I hold this standpoint to be always sounder than that, which

of process to be restored resembled our much abused preserva-

tion of monuments, in which architects frequently by overzeal

blinded their eyes and by uninteresting work was secured

historical, or best give their own new creations in improper

places, and when all later times have come or vanished.

The master of the knowledge of the past will take a position

to the past principle:-- "Only the living has rights," and a

they will not leave things which again long people in the o-

positions of those then living, in order to have to ask them-

293 for other reasons remained unfinished, but whose completion continued an unavoidable necessity, and not to sentimental works of restoration or the rebuilding of the half destroyed works of their ancestors. In spite of all sympathy for the antique, there was in that time no greater ruler or his cultured adviser, to entrust an artist therewith, to restore again a building in the so-called spirit of the ancients or on the basis of doubtful ruins. Their inspirations remained pretty on paper, and good money was squandered on them on other people for strange things. The knowledge derived from the ancient works was utilized in possible and practical ways, such as the new life demanded. Not to satisfy caprice and self-conceit, for no renown would be gained by such undertakings, according to the ideas of the time -- would one make the ancient heaps of ruins live again, but men still less desired to destroy their charm, or to rob them of historical memories.

122. Preservation of Monuments.

Men would sometimes make a hall of the baths or a temple into a Christian church, which was still sensible; but they did not create for them purposeless and senseless new buildings in the ancient garb, which indeed would not differ from what comes from the hands of our modern architects, with their mania for rebuilding churches, palaces and castles under the pretence of the so-called "preservation of the monuments."

Men generally allowed these to fall into ruins, which could be preserved no longer, and then did not utilize them for their purposes; for others was preserved what remained, but no experiments were made.

I hold this standpoint to be always sounder than that, which proposes to restrict henceforth our much esteemed preservation of monuments, in which architects frequently by overestimating their powers and by underestimating what has become historical, at best give their own new creations in improper places, and which all later times must condemn or ridicule.

The masters of the Renaissance period paid more attention to the hard principle:-- "Only the living has rights," and they did not leave things unable again long obsolete in the opinions of those then living, in order to have to ask them-

themselves after the work was completed; what next? In similar cases we make "museums" of them, into which the most recent art may fully enter.

123. Knowledge and Abilities of Architects; Owners.

Alberti required from architects little or much, just as one may take it:-- "Painting and mathematics," i.e. a good knowledge of drawing and of mathematical science (by which moreover was not understood differential and integral calculus); with these arts -- painting, drawing and mathematics -- combined with study and industry, the architect would receive from those born later and would be assured of gratitude, wealth, praise and reputation. He says here that the architect need be neither a lawyer nor an engineer, astrologer, musician nor rhetorician, in order to explain his plans. He already earlier gave the good advice of Faust to Wagner:-- "Understanding and good sense express themselves with little art; if you are in earnest, is it necessary to hunt for words to speak"?

Filarete, a less distinguished, less learned and self-conscious master, expressed himself more in the manner of Biedermann, when he says that the architect should provide in the best way for everything necessary to the building, also reliable men, conduct the work carefully and economically as possible, keep clear accounts, make reports and statements on request, make payments punctually, and order for the superintendent the work daily. The qualified architect merits the highest esteem of the owner, not merely for his rarity, but chiefly because he is so placed in charge of an opportunity, dearer to him than any other.

He compares the building with the human body, since like that it must first be conceived, when he says:-- "The owner entrusts his ideas to the architect, who receives it and himself develops it, just as the woman does the child for months; and just as the woman finally brings forth the child, so he also brings the architectural idea into the world, and indeed in the form of a wooden model. The latter is then treated with infinite care, just as a newborn child is by the nurse; as somewhat later a teacher is given to the child, the architect seeks skilful artisans for his building; naturally in

agreement with the owner, like the former of the same. Note 90. See Antonio Lucio's Treatise on Architecture etc. Edited for the first time and prepared by W.

San Francisco. 1888. 12. 12.

In spite of these fine conditions, however, gives his princely employer in the most courtly and respectful manner the advice, "If he would understand the plan, then should he first read somewhat on the subject, and then learn to draw." But he should always be more quiet about such than his colleague Aschbacher, who when the subsequent emperor Maximilian was present at a conference between him and Tschann in regard to architectural designs, put him aside with the words:—"Go away and paint your horses, for you understand nothing of the art."

Note 91. In the domain of civil life, which is also so prominent in Pompeian paintings, Heron accomplished considerable; but Tschann did not follow his love for art. (See Schultze, Dr. Anton von Kaiser's edition. Leipzig. 1888. p. 47.) Tschann is the position occupied by the architect when Prince. When Prince visited Pompeii at the end of 1842, he enjoyed his creation and to rejoice in his work, from his artistic point of view. The latter had previously executed the plan of 10,000 souls assigned for the building about 1500 B.C. and this himself said, that the poverty and dignity of the work compensated for the outlay.

After finishing the work and a thorough examination on the spot, Prince said to his architect:—"Then next acted right, Tschann, in that you have acted in regard to the agreed cost. If then later spoken the truth, then would not yet have been able to erect such a palace, and neither the distinguished Palace nor the Church would have been built. Truly, would now stand here, my possessions and the fountain for these noble buildings, which all men praise, with its surroundings from envy. We thank thee, and award to thee the first place among all architects of the city."

Note 92. Bernardo di Matteo Gentile, called Roccellino in the work of Dr. H. von Steinhilber on Tschann. He seemed to be paid to him 100 golden gulden in excess of his salary and gave him a house in the city.

agreement with the owner, like the father of the same. 90

Note 90. See Antonio Averlino Filarete's Treatise on Architecture etc. Edited for the first time and prepared by W. von Oettingen. Vienna. 1890. p. 66, 67.

In spite of these fine conditions, Filarete gives his princely employer in the most courtly and friendly manner the good advice, "If he would understand the plans, then should he first read somewhat on the subject, and then learn to draw," but he should always be more quiet about this than his colleague Apollodoros, who when the subsequent emperor Hadrian was present at a conference between him and Trajan in regard to architectural designs, put him aside with the words:-- "Go away and paint your gourds, for you understand nothing of this. 91

Note 91. In the domain of still life, which is also so prominent in Pompeian paintings, Hadrian accomplished considerable; but Trajan did not favour his love for art. (See Schultze, Cr. Bauten des Kaisers Hadrian. Hamburg. 1898. p. 4).

Interesting is the position occupied by the architect with Pius. When Pope Pius visited Pienza at the end of 1642, to enjoy his creation and to rejoice in its fame, from his attendants came to the Pope numerous complaints about Bernardo. (Rossellino). The latter had apparently exceeded the sum of 10,000 scudi assigned for the building about fivefold. But Pius himself said, that the beauty and dignity of the work compensated for the outlay.

After inspecting the works and a thorough examination on the spot, Pius said to his architect:-- "Thou hast acted rightly, Bernardo, in that thou hast misled in regard to the assumed cost. If thou hadst spoken the truth, thou wouldst never have been able to start such a problem, and neither the distinguished Palace nor the Church seeking its like in all Italy, would now stand here, thy deceptions laid the foundation for these noble buildings, which all men praise, with few exceptions from envy. We thank thee, and award to thee the first place among all architects of the city." 92

Note 92. Bernardo di Matteo Gamberelli, called Rossellino in the Work of Dr. H. von Stegmann on Tuscany.

He caused to be paid to him 100 golden gulden in excess of his salary and gave him a festal garment. The building peri-

period lasted only 2 years (1460-1462). What would the ancient Ephesians have said of this procedure? (See Vitruvius).

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Section XIII. Palace Architecture.

"The ideal and general problem of civil architecture is less clearly expressed in residences and public buildings, that have to realize their particular and varied purposes, than in the private palaces, which bear the unity of will and of purpose on their facades, and by their similarity may form distinct style groups."

Burckhardt, J. *Geschichte der Renaissance in Italien*. Stuttgart. 1878. Sect. 90. p. 167.

124. Diversity.

The Italians quite early distinguished between palaces, villas and houses. Filarete divides private buildings into houses of the nobles, those of citizens, and those of the lowest class; he speaks of the palace of the nobleman, of the house of the merchant, of the house of the citizen, and outside of the city of the houses of the nobles, of citizens and of peasants.

According to the local conditions, customs and habits of the occupants, particular types were developed, for the palace and the house, which may be classified according to the method of J. Burckhardt.

125. Florentine-Sienese Palace Types.

The Florentine-Sienese type of palace is to be named as the oldest, that occupied the first place for a long time. It was preceded by Italian-Gothic architecture, not without leaving traces in the new tendency. It had nothing to do with the ancient mountain castle and its usually unavoidably irregular plan. Its most important peculiarity remains the regular plan. "The unity of the facade and of the ground plan was the mother of all other unity and architectural logic."

Compare in this sense the mediaeval facade system from Siena and Pisa and the ground plan of a court design there. (Figs. 220, 221, 222; mediaeval facade systems from Siena, Pisa and Venice).

The arrangement in plan generally adheres to that of the antique Roman house; an open court surrounded by porticos; from which were entered the living rooms and the stairs to the upper stories.

The architectural ornamentation of the court facades was harmonized with the interior of the house, and for the street

facades was uniformly distributed over the wall surfaces. The main entrance was not especially distinguished, all dividing or grouping of the masses is rejected; columns were preferred as free supports and stairs with straight flights. The facade surfaces themselves remained undivided, the stories were only indicated externally by slightly projecting window sill belts, and the windows of the upper story had semicircular heads.

256 The facade masonry rises above a strongly projecting heavy plinth, that extends around the building like a bench for a seat, forming a powerful base for the massive structure. This is itself characterized by a peculiar treatment of the faces of the ashlar, which contributes to the effect of the facade. In the courts these are graduated upwards, and thus impart to the lower story the impression of solidity like a fortification, to the upper stories that of lightness to elegance in the treatment of the surfaces, recalling the graduation of antique Roman facades by Doric, Ionic and Corinthian half columns or pilasters. The main entablature is designed with regard to the entire height of the palace, so that only three factors are to be considered:-- base, mass and crown. The subordinate divisions by belts do not interfere much. (See G. Semper. *Der Stil*. Edition of 1863. p. 355 to 388).

In the general arrangement mediaeval tradition is firmly held, only the details experiencing a change in form of the Roman antique, by which in particular is affected the main entablature, yet with correct understanding in the omission of the architrave, in place of which a bold half round appears as the termination of the ashlar masonry.

Mediaeval boldness and strength in the elevation, combined with antique elegance of the detail forms, thus is made apparent in the new style in palace architecture, as whose chief representatives may be taken the masters Brunellesco, Michelozzo and Cronaca. This is the group of masters, still influenced by Gothic, to whom are attributed the Florentine Palaces Pitti, Riccardi and Strozzi, to which are further joined in Florence Palaces Guadagni and Gondi (G. da Sangallo); in Siena Palaces Nerucci, Piccolomini and Spannochi (all between 1460-1474 and attributed to Rossellino and di Giorgio).

to the 1971-72 (1971-72) and 1972-73 (1972-73) seasons.

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Fig. 223 shows the most perfect Florentine palace of this epoch of the Tuscan Renaissance in its grand appearance. When H. Wölflin says (Renaissance and Barocco. 1877. p. 92):-- "This type carries everything into height and dryness", this is even a matter of taste. Matured ability and clarified nature are not required from a first attempt.

In any case ^{the} bold undertaking in horizontal composition was followed by a mighty result, shortly after the dying-out of Gothic.

Passing to the separate works, certainly prominent as landmarks of the early Renaissance in Tuscany are Palaces Pitti, Medici-Riccardi, Strozzi, Sondi and Guadagni in Florence, with Palaces Spannochi in Siena, and their architectural history and construction are yet to be treated in brief form.

126. Palace Pitti.

An absolute certainty, documentary evidence, that as generally assumed, Brunellesco (1377-1446) built Palace Pitti does not exist. Likewise the year of its erection is not certain, for which 1440 is usually named. But in no case, according to the opinion of von Fabriczy,⁹³ should any date later than the year mentioned be assumed for the preparation of the wooden model.

Note 93. See Fabriczy, G. von. Filippo Brunelleschio His life and works. Stuttgart. 1892. p. 302.

The owner was Luca Pitti (1392-1472), who failed in his conspiracy against the Medici (1466), but who abandoned his associates, and thus did not share their fate -- the punishment of banishment. We find Luca shortly before his death again in his dignity as one of the "Twenty of War," and that after the catastrophe he built yet further on his palace is shown by his statement of his wealth of the year 1469, where is mentioned⁹⁴ "A new house, that I have built, and on which I am still building, likewise as a dwelling for my family." His building also brought him into occasional embarrassments, yet he died as a rich man.

Note 94. See the same. p. 323.

If 1446 was the year of the death of Brunellesco, then it is actually good to not place the origin of the model of the building later than 1440, for which von Geymüller gives for consideration, that this might possibly be a reproduction of

that formerly proposed by Hannelius for raised building, and which was rejected by the owner as too grand, and that the building destroyed in 1892 at his request. How far the building had progressed when Hannelius died, we do not know; but we have no knowledge of the original plans, and of its ground plan and elevation.

Representations in ancient drawings, engravings, and paintings.

Only one view of the city, and is given in the drawing of the city, and bears the date of 1478. There is also a drawing of the city, which is in the lower story containing 8 windows and 5 windows in each of the two lower stories. The representation is poor, and not much more to be said of it. It is a drawing of the city, and is designed in the same view, which is designed in a drawing with 4 windows only.

Note 22. Also see engraving published in 1810 in the 1st part of the *Revue de l'Architecture* en Italie, p. 90; View of Florence at the end of the 15th century after the original in the Berlin Cabinet of Engravings on copper.

Note 23. In *Revue de l'Architecture*, G. de Lascaris on the city of Florence.

We now derive the conviction from the view of the city in the year 1478, that the city as it existed in a limited extent in comparison with what now is existing, that they were more compact, and that the city as it existed in the "second house" as it is called, as we noticed in our first drawing. This original building was also planned for but 7 windows, as the story contained in three stories with 7 windows in each story, 8 windows and 4 windows in each story. The drawing, which has been in existence since the year 1478, was made by von Hannelius.

From the drawing, which was made by the original architect of Hannelius for the city of Florence. Taken as a whole, it may be said to be a drawing; it is conceived in the form of the executed drawing, and with 7 windows and 8 windows. It is the condition of the city as it existed with

that formerly prepared by Brunellesco for Palace Medici, but which was rejected by the owner as too grand, and that the master destroyed in anger at his refusal. How far the building had progressed when Brunellesco died, we do not know; also we have no knowledge of the original plans, neither of its ground plan nor elevation.

Representations in ancient drawings, engravings⁹⁵ and paintings give information concerning this, reference being especially made to a view of the city, that is given by Rohault de Fleury,⁹⁶ and bears the date of 1473. There indeed at the proper site is drawn and named a Palace of Luca Pitti with a garden, which is in three stories with a higher upper story built at the middle, in the lower story containing 3 doorways and 5 windows in each of the two upper stories. The representation is poor, and not much more is to be made of it architecturally, than also of the Palace Lorenzo de Medici with its gardens given in the same view, which is designed in 3 stories with 4 window axes.

Note 95. Also see engraving I published by Müntz in *Histoire de l'Art pendant la Renaissance en Italie*, p. 90; View of Florence at the end of the 15th century after the original in the Berlin Cabinet of engravings on copper.

Note 96. In Rohault de Fleury, G. *La Toscane au Moyen Âge* etc. Paris. 1873. Vol. 1. Florentia. Pl. 1.

We now derive the conviction from the view of the city in the year 1473, that the two palaces then existed in a limited extent in comparison with that now in existence, that they were under roofs, and that Pitti at his death indeed saw his "second house" so far completed, as he desired to build it. This original building must have been planned for but 7 window axes, so that its story designed in three stories with 7 windows in each story, 3 portals and 4 mezzanine windows in the ground story, must have been in existence then.

By von Geymüller and von Stegmann⁹⁷ was made known a drawing from the Uffizi, that must represent the original sketch design of Brunellesco for the palace of Luca Pitti. Taken as entirely general, it may be held to be this; it is conceived in the form of the executed palace, designed with 7 axes and 3 stories; it has the continuous balcony with balustrade with balustrade of small columns, but not the same proportions. T

The windows are without any division or panel, formed as simple, great, unusually slender round-arched windows in the uppermost story, where the imposts are accented by belts. The facade terminates with a stone cornice of small projection and without an attic. A similarity of this design to the representation of the palace on the view of the city is not to be recognized.

Note 97. In Geymüller, H. von & C. von Stegmann. *Die Architektur der Renaissance in Toscana*, arranged according to the Masters. Munich. 1896. p. 63, 64, 65 of the text.

In the work just mentioned ⁹⁷ reference is made, that the ancient angle edges of the original building, extending with 7 axes through the entire height of the 3 stories, was recognizable in the jointing, "but which were interrupted by the bonding and the voussoirs." This admission, that the continuous angles were again interrupted by new bonding ashlar and voussoirs is here rather fatal evidence. I have examined the building more frequently on this account, but could discern no irregularity in the bond, than what occurs elsewhere in other window piers near the middle. Also the large and beautiful Plate 13 in the same work shows nothing of such an occurrence. Separations or irregular setting between the old and new portions of the wall, whose jointings lay nearly 200 years apart, I have been unable to find.

Conti ⁹⁸ mentions other marks on the building itself in favor of the construction with 7 axes. He determined that the middle structure with the extent of 7 axes had no developed plinth, that for it the ashlar with bosses began at a certain height above the external ground, and that here was planned a plinth bench as for the other Florentine palaces of this time. The absence of the plinth is correct; no arrangements exist for the addition of the bench; just as well might be planned the continuation of the side bench. I might rather assume, that here actually and originally was executed a plinth bench, but which was later removed, since men judged it best to remove a place along the building for the sitting of persons without any business, as soon as the Palace of Luca Pitti was elevated as the Palace of the Prince. Conti directs attention to this, that in all stories of the middle structure with 7 axes still remain the characteristic torch and sta-

with rings, while they do not seem to be connected with the structure. The in situ corner, and seen as seen on any large photographic view of the building.

Note 98. The same work, p. 216-221.

Note 99. See plate 13 of the work mentioned. Von Geymüller

von Steinhilber. Die Architektur der Renaissance in Toscana.

On the other hand it may be seen, that as a corner element in the passage connecting the Uffizi and Pitti, "on the side with the Pitti," the building with 7 axes, a slightly projecting belt course and a low cornice with pinnacles, was terminated by a widely projecting rather cornice, from which it follows, that the entire uppermost story and the existing facade cornice were not executed by hand, but the latter not even designed by him, which may be seen to be correct or, especially when Vasari's remarks on it: "which he considered within the city for the same reason, and certainly in an even magnitude and maintenance to the second story."

We can now say indeed, if the future does not reason as likely-ly, that until the beginning of the 17th century Palazzo Pitti had three stories composed of seven axes. The view of 1673 assumes it as calculated, so that Pitti would have lived to see later, as he died in 1672. Seventy seven years later on Feb. 8, 1649, a great earthquake of Pisa, destruction of Pisa's Pitti and the Palace to Duke Cosimo I, who certainly is his wife, Eleonora of Toledo.

Note 100. Letter of L. Schorn. Stuttgart and Tübingen. 1867.

The building now experienced only fragments and corners, both in the interior as well as on the exterior. From the ground story was removed its great ground doorway, and this was replaced to a simple one in the middle; they were replaced by the two-story windows, each received their own, the cornice was supported by consoles, and these, which were inserted in the facade. For the ground floor of the rooms in the

(1568).

Ammanati, who died in 1582, also built the great court (1568-1570), or what Grandjean de Montigny and Pugin say.

standard holders, in the ground story even there furnished with rings, while they do not occur on the adjacent parts of the structure. This is again correct, and can be seen on any large photographic view of the building. ⁹⁹

Note 98. The same work, p. 318-321.

Note 99. See plate 13 of the work mentioned. Von Geymüller & von Stegmann. Die Architektur der Renaissance in Toscana.

On the other hand it may be stated, that on a copper engraving in the passage connecting the Uffizi and Pitti, "on the picture with the lady," the building with 7 axes, a slightly projecting belt course and a low loggia with piers, was terminated by a widely projecting rafter cornice, from which it follows, that the entire uppermost story and the existing main cornice were not executed by Brunellesco, the latter not even designed by him, which may indeed be judged to be correct, especially when Vasari ¹⁰⁰ remarks on it; "which he commenced within the city for the same nobleman, and carried it up in such magnitude and magnificence to the second story."

281 We can now say indeed, if the future does not teach us differently, that until the beginning of the 17th century Palace Pitti had three stories composed of seven axes. The view of 1473 assumes it as completed, so that Luca would have lived to see this, as he died in 1472. Seventy seven years later on Feb. 3, 1549, a great grandson of Luca, Buenocorsa of Luca Pitti sold the Palace to Duke Cosimo I, who acquired it for his wife, Eleonore of Toledo.

Note 100. Edition of L. Schorn. Stuttgart and Tübingen. 1837. Vol. 2. p. 210.

The building now experienced enlargements and changes, both in the interior as well as on the exterior. From the ground story was removed its great arched doorway, and this was reduced to a single one in the middle; they were filled by great rectangular windows, that received gabled caps, the benches were supported by consoles, and lions' heads were inserted in the balustrades. For the changed uses of the rooms in the ground story, these alterations were carried out by Ammanati. (1568).

Ammanati, who died in 1592, also built the great court ((1558-1570), of which Grandjean de Montigny and Famin say, that its columns offend good taste, sound sense and the purp-

purpose of the column, therefore the desired effect was not
 attained. It is not
 on in transferring the inscription to the walls of the col-
 umn, he must have said to himself, that in the design of an
 open court he could not enter into competition with the life-
 of its facade. The courts of Palaces Ricasoli and Ricasoli
 are better and more happily conceived in this, since they con-
 siderably do not attempt to recall the street facade, and the
 architects sought no connecting parts between them.
 The drama of the columns in the form of columns laid on ea-
 on other and of the Tuscan order do not create the impression
 of serenity; they even have a more graceful effect than those
 of the Ionic order placed over them, where the walls of the
 columns appear to be concealed by a number of square sides,
 and the Corinthian, in which plain forms alternate with those
 swifter according to a pattern. The desired expression from
 the heavy through the graceful to the rich is not attained."

one Amphitheatre in Verona are already better. The first
 no more expression of the wall panels between the columns, a
 executed in restricted work, are no more a fiction, since the
 and the entire architectural system.

But Ammannati also built the wonderful combination of the o-
 court on the garden side, the garden with the semicircular
 ascending stairs and the fountain over it; to him must be as-
 cribed also the crowning main cornice drawn in the "structure
 with the lady" mentioned, if it were really conceived and
 was not temporary, as for the cornice of Cassa Pazzi (fig.
 100), but which is expected to one would take for a "low lan-
 guage with a projecting rather cornice."

is a creation of Fallopi, that was carried further by Braman-
 ti and Giovanni da Bologna. After 1630 at each side of the
 classic columns were added 8 windows and the two-story corri-
 on of the main facade, begun by Giulio Perini, nephew of Am-
 manati, and completed by his son Antonio.

The projecting wings with the arches date from a much later
 or time, the left (of the observer) was erected in 1768 by a
 Perini, nephew of the first Perini.

purpose of the column, wherefore the desired effect was not attained, as by the rustication on the exterior. It is not to be denied, that Ammanati did not have a peculiar conception in transferring the rustication to the shafts of the columns; he must have said to himself, that in the design of an open court he could not enter into competition with the effect of its facade. The courts of Palaces Riccardi and Strozzi are better and more happily conceived in this, since they consciously do not attempt to retall the street facades, and the masters sought no connecting parts between them.

282 The drums of the columns in the form of cheeses laid on each other and of the Tuscan order do not create the impression of strength; they even have a more graceful effect than those of the Ionic order placed over them, where the shafts of the columns appear to be concealed by a number of square slabs, and the Corinthian, in which plain drums alternate with those swelled according to a pattern. The desired gradation from the heavy through the graceful to the rich is not attained. The antique models, for example on Gate Maggiore in Rome or the Amphitheatre in Verona are already better. Also the frame-like enclosures of the wall panels between the columns, executed in rusticated work, are no happy addition, since they make the entire architecture unquiet.

283 But Ammanati also built the wonderful termination of the court at the garden side, the grotto with the semicircular ascending stairs and the fountain over it; to him must be attributed also the crowning main cornice drawn in the "picture with the lady" mentioned, if it were really constructed and was not temporary, as for the portico of Chapel Pazzi (Fig. 224), but which as executed no one would take for a "low loggia with piers and with a projecting rafter cornice."

The garden design adjoining the court and connected with it is a creation of Tribolo, that was carried further by Buontalenti and Giovanni da Bologna. After 1620 at each side of the middle building were added 3 windows and the two story portion of the main facade, begun by Giulio Parigi, nephew of Ammanati, and completed by his son Alfonso.

The projecting wings with the arcades date from a much later time, the left (of the observer) was erected in 1766 by Francis I, the right in 1783 by Pietro Leopoldo through Rugg-

Ruggieri, but the latter was only completed in 1889 by Pasquale Poccianti. The left wing was furnished with a new stairway in very ancient times.

In the year 1640 the middle structure of the palace deviated about 0.64 ft. from the vertical, but it was again made true by Alfonso Pasigi by means of ties.

What astonishes us today is not the originally conceived design in stone, but rather the happily combined parts of the building, that have originated in the course of four centuries, but seem as if by a single aspiration, like an entirety of majestic grandeur and effect so designed at first! "One asks himself, what one of the mighty men scorning the world, it may have been, who furnished with such means, could go so far out of the way of everything merely beautiful and pleasing?", "Burckhardt once exclaimed; the answer thereto was given by von Geymüller; "Princes and architects meriting the eternal gratitude of later ages, who always contrived to build in the forms of Brunellesco," at least so far as concerns the main facade next the Place. Also the recently inserted stairway near the garden entrance piously adheres to the style of Brunellesco in its forms (Fig. 225 and plan in Fig. 226 ¹⁰¹). This is the only and best care for monuments, the only true care for monuments in the spirit of Alberti, which could have been applied to a work of such high importance. No owner and no artist desired to force themselves forward here; all later men subordinated themselves to the grand spirit, the first creator of the nucleus of the building, and thus created a work, that appears as a homogeneous structure -- a monumentally expressed warning to us moderns!

Note 101. From Lübke, W. Geschichte der Architektur. Leipzig. 1886. Seemann.

Note 102. See his *Placcone*. 7th edition. Leipzig. 1898. p. 308.

The adjacent ^{colored} shaded sketch (Plate V) gives a view of the history of the origin of the building in a clear way, clearly and distinctly showing what was original and what were additions. The main facade exhibits the primitive architectural principle of diminishing the masses upwards, produced by a slight recessing of the separate stories and likewise by the not very pleasing gradation of the expression in the ashlar

work. Stories of approximately equal height (ground story 39.0 ft., second story 38.1 ft. and third story 38.8 ft) with a height of the building to the top of the attic of 116.0 ft., equal belts 3.15 ft. high, equal windows 24.6 and 24.5 ft. high and 12.2 ft. wide, arches of equal depth, equal widths of piers, and in all the stories the lack of all ornamentation characterize the building.

But one question yet remains open; how were the window openings originally formed? Did the window openings, measuring nearly 301.4 sq. ft. as in the small sketch drawing, remain without any division, or were there not inserted small stone columns with arches or stone window crosses to make closure easier, as in other Florentine palaces? What now exists, the inserted masonry with a door opening on the balcony, above being a window in four lights with a round opening above this, are additions of the time when stucco-workers and painters decorated the state apartments, when Pietro da Cortona (1596-1669) was engaged on the building.

Lunettes, intersecting compartments and the vaults of the ceiling begin above the windows with crosses and ending horizontally inside. In the Hall of Marte the round-headed window is included in the ornamentation; where it is disturbing, it is again walled up, or transformed into an oval, as in the Hall of Giove. This position of the openings within the great facade arches is a contradiction, like the arrangement and form of the show ceilings in the architectural work.

284 We now find in all window jambs of the second and third stories, both in the old as well as in the new parts of the main facade, pilasters arranged with peculiar capitals, that bear the beginnings of an architrave, above which rises a plain arch band. (Fig. 227). This arrangement is entirely overlooked in the publication of the Palace by Grandjean de Montigny and Famin, while it appears self-evident in a photogravure by Raschdorff,¹⁰⁸ but no reference whatever is made to it in the text. (Also the dimensions of the window are given there as 21.2 x 15.5 ft., while they are 24.6 x 12.2 ft., and when it is stated after Redtenbacher, that the ashlar have a length of 28.0 ft., which refers to a single one of these in the ground story at the left of the raised middle structure; and when it is further asserted, that the bosses are so great, t

that one could find shelter under it in rainy weather, which is to be understood in extreme cases of those on the terrace below, which is of later date and actually projects 3.3 ft. and more; but one cannot place himself beneath it, since they extend in the same way to the ground.

Note 103. Raschdorff, J. C. *Palastarchitektur von Oberitalien und Toscana*. Berlin. 1888.

But in the Work of von Geymüller and von Stegmann on the Architecture of Tuscany, these jamb pilasters are shown on Plate 13 a, and in the text (p. 65) it is said, that "the pilasters in the jambs of the windows exhibit capitals of a form appearing rather early." Certain bosses also bear stone-cutters' marks, as I have found such on Palace Riccardo. Fig. 227 gives this form at the windows according to my own sketch, and I further add two thereto, on a capital in S. Croce, the other of such a one from one of the cloisters of S. Maria Novella, whose details recall the capitals of Palace Pitti -- they are thus of Gothic origin!

Hauser gives in his "paustillehre" expression to the opinion, that the window opening was once filled by stonework, as in the other palace windows of this time in Florence and Siena, an idea that cannot be entirely rejected. Were this the case, then must be assumed a form as on Palace Rucellai, since beginnings of an architrave exist above the pilaster capitals, or as on Palace Piccolomini in Siena, or that of the same name in Pienza. moreover a division in three parts with perforated slabs over the architrave according to Fig. 228 would not be excluded.

The original interior is no more, and it could scarcely be even compared with that presented today. The "ambitious" (climber) Pitti could not exhibit what the Grand Dukes of Tuscany had collected in the time from 1550, when they made their residence in Palace Pitti, where also the garden and park designs have increased, and there exists the finest conceivable abundance of the growth of trees.

The decoration of the walls and ceilings, the unusually wide architraves of the doorways, of the most costly kinds of marble, the incomparable sculptured ornamentation, the correct arrangement of the apartments, the multitude of gold and silver vessels, the cups of gold and enamel, the precious fa-

advanced and powerful -- all pervading in the spiritual

monumental and refined minor ends. A Ganga flowing in

is a divine being in the temple of art, so consecrated, so

inviting for the heart, and blessed for every one, who in a

the time of the "youthful tendency" and similar occurrences

has not yet lost all refined feeling. After a tour in the

Palace, during the reception of what has been said, however for

a few minutes takes a place at the wide table in the festival

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faience and porcelain -- all harmonizes in the grandest manner, and we stand entranced by the charm presented by the true monumental and refined minor arts. A Sunday morning in the Argentaria, the treasury of the Palace and that of the Medici, is a divine service in the Temple of Art, so consecrated, so elevating for the heart, and blessed for every one, who in the time of the "youthful tendency" and similar occurrences has not yet lost all refined feeling. After a tour in the Palace, under the reaction of what has been seen, whoever for a few minutes takes a place at the wide table in the festal hall, and looks beyond Ammanati's court to the grotto with its white marble fountain, whose water gleams in the sun like crystal and silver, and toward the great lawn artistically enclosed by rows of seats, shaded by towering ancient evergreen oaks and cypresses, interrupted by brightly colored flower beds, above which stretches the deep blue vault of the heavens, -- he learns to recognize the men of the Renaissance, to understand and to envy their high culture, their sense of the ever beautiful, and the art to live and move in this!

127. Palace Medici-Riccardi.

Not so mighty in expression and not so imposing in dimensions is the effect of Palace Medici-Riccardi, built by Michelozzo (1396-1472) for Cosimo the Elder (1480), which originally was planned only half as large, but was considerably enlarged in 1714. By sale the building passed to the Riccardi in 1659.

What now exists no longer coincides with what the master originally intended. The Palace was represented in the previously mentioned view of the city ¹⁰⁴ of the 15th century as a three story structure with 4 axes on the front, with a plinth bench and two great doorways in the ground story, coupled round-arched windows in the second and third stories, terminating with a bold cornice with consoles, and adjoining an enclosed garden, not far from Church S. Lorenzo.

Note 104. See Rohault de Fleury. Vol. 1.

The system of the facade is as simple (Fig. 229), definite and clearly expressed as that on Palace Pitti:-- regularity of the arrangement of the windows, calculated more for the effect of the surfaces than for their subdivision, division of the stories by window sill belts, crowning cornice designed

with regard to the entire height of the facade. What is merely indicated at Palace Pitti is here carried out with assured security: the gradation of the rustication in the stories from rude to free. The ashlar in the same story are not all of equal height, the jointing is not perfect everywhere: the antique-Roman cornice is too large and too heavy in design.

Wrought iron standard and torch holders with the rings, transferred from the Gothic but executed in the forms of the new style, exist on all the stories. The corner of the building is ornamented in the middle story by the massive stone shield of arms of the Medici, suspended from a volute by bands; on the ground story projects the wrought iron lantern, an arrangement likewise taken from the Gothic. (See Palace Vittelleschi at Cornuto). Beautiful is still the columnar court with its composite capitals, the coupled windows in the ground story, and the open horizontally covered loggia. The archivolts are in bands after the antique mode, where the mouldings reappear below as in the late Roman style, as on the Palace of Diocletian at Spalato. The arches rest directly on the capitals; an architrave extends above them and leaves between itself and the window sill belt a high band, which is adorned by medallions and great festoons of fruits in sgraffito. The wall surfaces of the middle story are likewise squared in sgraffito and are terminated above by a palm frieze. In spite of its enlargement, the building has remained the most distinguished House of a patrician, and it has not developed into a palace, like Palace Pitti.

Notable in the interior is the beautiful palace chapel with the precious frescos of Benozzo Gozzoli (1459-1463), the gallery with the frescos of Luca Giordano (1683), and on the exterior the displacement of the axes in the different stories. (Fig. 229 and the ground plan in Fig. 230). ¹⁰⁵

Note 105. From Burckhardt. *Geschichte der Renaissance in Italien*. Stuttgart. 1878. Paul Neff's Verlag. (Schreiber).

128. Palace Strozzi.

The final word in the Tuscan architectural style of the Early Renaissance was spoken by the masters of the Palace erected for the famous opponent of the Medici, Francesco Strozzi in 1489:-- Benedetto da Majano (died 1497) and Simone Pollajuolo, called Cronaca (died 1508).

Drawings in the Uffizi and the still preserved architectural model show, that in this case on the whole the building was erected just as it was planned; but the owner did not succeed in making it isolated on all sides. It was designed and executed with 3 stories and 9 axes at the end and 13 axes on the longer side; the ground story has the characteristic plinth bench, contains the great entrance portal and small rectangular windows. The two upper stories each have 9 or 13 coupled round-arched windows, and are separated from each other by window sill belts, are but slightly grafted, and have rusticated masonry cut to a definite pattern and in courses of unequal height, with strongly excentric reliefs, arches, deeper at the crown, and terminating over windows with a bold round. Above this ~~and~~ representing the antique architrave appears a plain frieze, and then the antique main cornice with volute consoles, egg moulding and dentil band, most finely arranged in its height and projection and harmonized with the entire height of the building.

229 On July 16, 1489, was laid the corner stone for the Palace; after the death of Filippo (1491) and of his first architect it was continued by Cronaca, but was only completed 23 years after his death.

The piers are adorned by the characteristic torch and standard holders with the rings, the angles by the iron lanterns of Nicolo Grosso, called Caparra, over these being the great consoles with bands for the family arms carved in sandstone.

The dimensions do not equal those of Palace Pitti, but exceed those of Palace Riccardi, on which the distance from one window sill belt to the next is only 22.8 ft., while this reaches 30.6 ft. on Palace Strozzi, thus exceeding the other by 7.8 ft. The largest apartment in the Palace does not exceed an area of 26.8 x 53.0 ft. The porticos of the court have unequal widths of 14.1 and 25.9 ft.!

Burckhardt calls this dignified building:-- "The final and highest form, which a stone structure can attain without connecting or transition members and by mere contrast in the treatment of the surfaces." -- Which every professional willingly accepts.

In the great Work on Tuscany on photograure plate 2, Benedetto da Majano is given as the master of the building, accord-

According to the latest investigation; likewise in the present

in the biography of Giulio de Sangallo (1445-1506; see p. 12 of the work mentioned), the latter is mentioned as designer of the building, indeed on the ground of information from the wooden architectural model and from the painted documents. According to these, old town-
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according to the former acceptation; likewise in the latest edition of the "Gicerone" Benedetto is named as master. But in the biography of Giulano da Sangallo (1445-1516; see p. 12 of the work mentioned), the latter is mentioned as designer of the building, indeed on the ground of information from the wooden architectural model and from the building accounts published by Jodoco del Badia.¹⁰⁶ According to these, old foundations were removed from the building trenches in Aug. 1489, and the walls were begun anew in 1490, from which time forward Arnaca was already engaged on the building; Giulano da Sangallo received for his first architectural model in wood, between Sept 19, 1489, and the following Feb. 6, 115 lire and 10 soldi in three instalments, "for his making and part of the wood used in making the model of the house."

Note 106. See *Raccolta* (collection) of the best antique and modern buildings of Florence, accurately measured and drawn. Work with 74 plates, by the architects Riccardo and Enrico Mezzanti, Torquato del Lungo and Pietro Berti, continued by other distinguished architects, with historical illustrations by Jodoco del Badia. Florence. 1886-1887.

A view of the "first model in wood" was reproduced by photogravure on plate 15 of the Work mentioned, and we see from this, that the present arrangement in 3 stories with 9 and 13 axes, the entrance doorway and rectangular mezzanine windows, the coupled round-arched windows and excentric relieving arches, as well as the rather antique console cornice, belong to the original design. On the other hand according to the model, rusticated ashlar with bosses rounded to pattern, as on Palace Rondi, are intended on the ground story, on the next story being a sort of diamond ashlar (frustums of pyramids or with angles beveled in planes, and the ashlar of the third story are cut smooth; the astragal is omitted, the consoles of the main cornice are stilted, of simple form and placed near each other, while it must be said otherwise, that in its height and projection it is well adapted to the entire building. A gradation in the expression was also in the treatment of the ashlar in the different stories on the first model,
 290 as afterwards in the execution, but only original in a rather different way from the purpose of the architect. A geometrical partial elevation of the facade is given in Fig. 231 aft-

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after Grandjean and Pamin.

According to the statement of del Badia, the building was so far advanced, that in July, 1500, the consoles of the main cornice were set on the half opposite the Mercato Vecchio, and on Sept. 15 of the same year this part was completed. But to-day the astonishing main cornice still stands unfinished. Completed is only the portion on the part next the small Place and on half the facade on the adjacent street front at right angles -- thus being just one half of the extent intended. (Fig. 283).

Cronaca died in 1503 and Giulano da Sangallo in 1516; consequently the first architect survived for 8 years his successor, the constructor of the amazing principal cornice.

The problem proposed was to place a stone main cornice projecting 7.3 ft. on a wall 3.6 ft. thick, increased to 4.8 by corbelling. It was solved by treating the consoles as actual beams 9.4 ft. long, 2.00 ft. wide and 1.5 ft. deep, which project 5.8 ft. from the true face and are supported for 2.6 ft. by the bearing members (cyma, dentil band and egg-and-dart moulding), so that strictly taken, it can be regarded as projecting free for only 3.6 ft. These stone beam consoles lie 4.9 ft. from centre to centre, and they are bonded anchor stones flush with the inner side of the corbelled masonry, there supporting a loading wall 4.6 ft. thick and 7.5 ft. high to the stepped top. But this loading wall further receives the load of the shed roof, that slopes downward to the rear and is about 26.2 ft. span. Hence the stresses and loading are abundantly provided for. These oppose the hollowed coffer slabs 8.7 ins. thick, the ornamental moulding of the cornice 4.7 ins. high and the cyma, consisting of hollowed blocks 15.1 ins. high and 2.95 ft. deep. Between the consoles extend solid slabs 9.0 ins. thick, including the crowning moulding. Between the coffered filling slabs, omitting a console but resting thereon, are inserted headers 15.8 ins. wide, 13.8 ins. high and 4.9 ft. long, again above these being laid others 19.8 ins. wide, 16.1 ins. high and 5.9 ft. long, into which the intermediate pieces are dovetailed. The binder between the coffers is notched to receive the crowning member of the cornice.

The load transmitted to the consoles, which is opposed by

their strength and by the loading masonry is not great. By anchor stones 3.8 ft. high is held the lowest projecting member of the main cornice, the ogee moulding and round; it is of slab form, rests 3.8 ft. on the masonry and projects only 7.9 ins. beyond it. It was then unnecessary to insert its rear end in a hooked ashlar. Besides these blocks 2.5 ft. high and set on each other, cut out on two sides, two ashlars are arranged over each other, cut out on one side, which grip the former ones. By this clamped stonework each console is surrounded and held (Fig. 232). The cornice also indeed would have been held without this clamping; for the requirements for the goodness of the construction consist in the use of the deeply inserted stone beam consoles with the fine backing and the hollowed construction of the projecting and crowning portions of the cornice. Only necessary was the insertion of the stone beam consoles into the recessed heavy anchor stones. (Fig. 233 107).

Note 107. The same construction of the cornice is found on Palace Piccolomini in Siena designed by Bernardo Rossellino -- "executed by the other masters" -- according to the data on von Stegmann's plate 13 of the great work on Tuscany. Likewise von Geymüller is of the opinion, that Bernardo Rossellino cannot with certainty be designated as the author of this Palazzo erected by Pius II, while for example, B. Federighi should be regarded as such, "yet it stands nearest Palace Strozzi in Florence, only the little Palace Spannochii can come nearer by its style and dignity." The Palace was begun Oct. 27, 1469, and work was always still going on after 1500. The foliage on the crowning cornice, whose interesting construction is emphasized by von Stegmann and von Geymüller, might date from the time of 1500-1520. They do not deduce the useful application of the "interesting construction," and its identity with that of Palace Strozzi does not further strike them. If not in its entire extent, the cornice was completed in July, 1500 -- it is so dated. About this time was executed the foliage on the Sienese Palace, but an exact date is wanting. Who remains as the author of this prized construction? Rossellino and his assistants or Cronaca?

Von Stegmann and von Geymüller, in the work frequently mentioned, have fully represented the construction for the first

time on an assured basis, but it is not made distinct or clear in text or illustration. Likewise the text and illustration contradict each other in some points. (See p. 7 of text and plate 16, where certainly the section of the cornice must have been completed, and where it may also be stated, that on Palace Strozzi we do not have to do with masonry entirely composed of coursed ashlar).

Otherwise we willingly admit, that the different publications on this cornice construction by Germans and Frenchmen are in part quite defective, or show certain errors; but when one sits in a glass house, one should not throw stones! -- Very clearly has this material been worked out by Worth in Breymann's *Allgemeine Baukonstruktionslehre*, 7th edition, Vol. 1, (Leipzig, 1903), even if what concerns the cyma and its supporting members does not entirely agree with the text of p. 7 of the work referred to.

293 The system of the facade of the Palace is represented by the scheme in Fig. 231, the plan by Fig. 233.

The colunar court by Cronaca (6 x 4 columns), the angle columns being counted twice, shows in the second story at the two ends a round arched arcade on piers, on the longer side being a blind arcade with inserted rectangular windows, over which are round medallions in the tympanums, while on the third story are arranged at the ends horizontally covered loggias, whose entablatures on stone columns of the Corinthian order. The open framework of the roof forms the ceiling of the loggia.

The Composite capitals of the ground story have inserted between the capital and impost the late Roman impost block; the archivolts are subdivided in the antique manner, the crowns of the arches bear flat keystones with foliage. Above the arches in the correct antique manner extend architrave, frieze and cornice, over these being arranged a separate parapet to the height of the window sill, thus being an innovation in contrast to the otherwise arranged window sill belt.

129. Palace Gondi.

Beautifully graduated ashlar work then appears on the Palace of like name, designed by Giuliano da Sangallo for the rich merchant Giuliano Gondi, that was begun in 1481 or 1490, was

very common in the ... of the ...
... in 8 stories with 15.7 ft. ...
... the middle story is 27.5 ft. high, it is terminated by a
heavy stone cornice with ... and dentils, the ...
... of the lower story ... a ...
... by ... of the middle story ...
... of the ... are free ... and are ...
... of the ... In the lower story
... are likewise ... but with fine ...
... of whom. (Fig. 285).

The ... of the windows are ... and ...
... from ... on ...
... to make ... a ... and ...
... This ... to the ...
... of ...
... (Fig. 285), ...
... whose ... is ...
... but were ...
... for joining the ...
... which ...
... are ...
... are not an ...
... by ...
... and ...
... of the ...
... to the ...
... 158

Note 158. ...
... of the ...
... at ...
... and ...
... the ...
... the ...
... the ...
... is the ...
... and ...
... on ...

only completed in 1874 by Poggi, but not in its original extent. Erected in 3 stories with 15.7 ft. distance between axes, the middle story is 27.5 ft. high, it is terminated by a heavy stone cornice with cantilevers and dentils, the rustication of the lower story exhibits a treatment, similar to that given by Sangallo on his model for Palace Strozzi by the use of courses of unequal height, while on the middle story the faces of the ashlar are free pointed and are separated from each other by rectangular sunken joints. In the upper story they are likewise wrought smooth, but with fine joints without especial accenting of them. (Fig. 235).

The moulded enclosures of the windows are broad and stepped, differing from those on Palaces Pitti, Riccardi and Strozzi, to make possible a better fit and better connection with the horizontal ashlar courses. This led Giuliano to the little whim of inserting shield-shaped blocks with oblique joints between the arches (Fig. 235), at the centres of which project iron pins, whose purpose is unknown to me. When courses of unequal height were once adopted, then a simpler arrangement might well be made for joining the straight courses with the voussoirs of the arches. With regard to proper stonecutting, the stepped arches are to be termed an advance, but which in this mode are not an invention of Giuliano. The stories are separated by window sill belts with dentils on the uppermost and small corbels in the middle story, the main cornice, $1/24$ part of the height of the building is too low in height, and is not proportioned to the entire height of the structure. 108

Note 108. Raschdorff gives after Redtenbacher the height of the cornice as $1/7$ part of the height of the building, but on plate 80 draws it correctly as $1/24$ th, and likewise von Stegmann and von Geymüller on plate 8 of their great work (Giuliano da Sangallo). The latter also give in the 3rd story the stone crosses in the windows with stone slabs in the tympanums and the arms -- the bent arm with a knife in the hand -- are also indicated in the arch spandrels.

Beautiful is the columnar court with the stairway built in between the columns, and open at the side with a richly decorated balustrade, the ornamented steps and the little fountain. Its Corinthian capitals bear the late Roman impost blocks, on

(11). *Salix glauca*.

which rest the arches; the crowns of the arches are adorned by a scrolled leaf fixed before each as a keystone. In the interior should also be mentioned the state fireplace from the date of the erection.

130. Palace Guadigni.

A particular place among the palaces of the Early Renaissance is taken by Palace Guadigni, for on it the fortress-like massiveness and rustication of the external walls are absent. Not as a defiant building of a citizen, but it appears to us serene and pleasing in forms, only the ground story recalling a weak reflection of the former. The city residence of the free citizen, who has attained rest, is here expressed.

Originally built for the silk merchant and manufacturer Rinieri di Bernardo di Domenico Dei in the years 1500-1506, the palace only bore since 1684 the well known name of Guadigni.

196 The family of Dei possessed a chapel in S. Spirito, located on the same Place, and then since Cronaca was engaged in the erection of that church, the connection of his name with the palace must indeed be permitted, and Cronaca be accepted as the architect thereof, although no document has been produced, which names him as such. 109

Note 109. Burckhardt, Lübke, von Geymüller and von Stegmann with Fantozzi (*Nuova Guida di Firenze*, 1844) adhere to Cronaca as architect, and so long as nothing more definite can be presented for this assumption, it must preferably be accepted.

The Palace is built of "gray stone", has three stories with an open loggia above them, on the side next the Place are 7 axes with a story height of 18.5 ft. between window sill belts, and it is crowned and protected by a rafter cornice projecting 7.5 ft. It exhibits the ground story of ashlar with elevated square mezzanine windows and a great doorway on the middle axis, enclosed by a series of ashlar at the sides. The ashlar are coursed in blocks of unequal lengths and height, all having the finely wrought border of $\frac{3}{8}$ to $\frac{5}{8}$ inch in width, and an entirely regular finely pointed panel. A stumpy belt course without the usual dentils terminates the story, and is repeated in the upper stories with the same form and mouldings. The semicircular windows are enclosed by a series of ashlar with widths equal to one-third the clear opening, and which

follow the form of the arch, becoming larger toward the crown, there ending in a recurved point. The wall surfaces between the windows and the belts are stuccoed, and the stucco is ornamented by sgraffito, so that broad friezes with flowers and palm leaves extend beneath the window sill belts, while the remaining surfaces are divided rectangles, receiving only a rosette as ornament in each panel forming a window pier. The ashlar at the angles are graduated upwards in width and in expression; the latter is also the case for the enclosures of the windows. Everywhere appears the same refined feeling in great and small; attention is paid to the sense, that requires the graduation of architectural forms upwards. (Fig. 236, particularly for the system of the facade).

297 The ground story is decorated by the typical rings, at the corners are the wrought iron lanterns of Caparra, as on Palace Strozzi, and on the piers in the second and third stories are the well known banner holders. On the third story from a console with bands is suspended the stone shield of arms of the owner of the palace. Particularly dignified here are the angles of the quoins, which are decorated from story to story by slender half columns with bases and capitals. The ending of the little columns at the angle pier of the loggia is correctly given by Raschdorff (pl. 52), but not so by von Geymüller and von Stegmann (Pl. 2, Cronaca).

Around the building on the two street sides extends the usual plinth bench; the stone columns of the loggia have capitals like Doric with added leaves at the corners; the architrave placed thereon, on which rests the rafter cornice, is of wood like that.

131. Palaces Nerucci, Piccolomini and Spannochi at Siena.

In this class of the palaces of the Early style, where a subdivision of the facade is rejected, may yet be named also the half Gothic Palace Nerucci and Palace del Refugio there; further Palaces Piccolomini and Spannochi, which correspond to the arrangements of the Florentine palaces mentioned.

On Palace Piccolomini the peculiarity is to be named, that in the frieze between the astragal and the antique cornice with consoles appear simple square window openings. (See also what is said of the construction of the main cornice).

On Palace Spannochi, built of tufa ashlar (indeed by Fran-

Francesco di Giorgio in 1436-1502), the cornice without any preparatory members rests on the uppermost story, but is in dimensions proportioned to the height of the building. On an egg moulding stand the tall volute consoles, whose intervals are adorned by strongly projecting medallion heads in terra cotta. A cornice with decorated fascia and cyma terminates the interesting main entablature. (Fig. 237 of the entablature).

Besides the group of mighty men, who created the defensive palaces mentioned, and consciously omitted every refined and ornamental architectural form, appeared a master of elevated knowledge and ability by his views and works. Almost contemporary and hand in hand with them, the great Leon Battista Alberti (1404-1492) led the advance. He likewise endeavored to create an effective architecture by well-judged contrasts of openings and masses, but by which he would impart to the plain wall surfaces of Florentine and Sienese palaces an animation different from that by ashlar bosses, or by sgraffito paintings on a ground of stucco. He placed himself on the basis of antique Roman art, which had produced equilibrium between horizontal and vertical composition, and he did not depend on the domination of horizontal or vertical subdivision. (See Figs. 238, 299, the facade systems of the Colosseum and of the Maison carrée (Temple of Augustus) at Nîmes). Master B. Rossellini undertook to follow him. What he devised has nothing to do with the great bulk and the earnestness of the works of the ^{of the} mentioned joint founders of the Tuscan Renaissance. Alberti stands on his own feet in his chief work, Palace Rucellai in Florence, and he gives what corresponds to his convictions. He first employed on this for animating the external wall surfaces, the antique columnar orders with their entablatures, where he carried the latter through as window parapets, showing pedestals beneath the pilasters.

132. Palace Rucellai.

The members have an extraordinary refinement in relief; the pilasters project but little from the surface of the facade; any gradation of the surfaces of the masonry is avoided; this is uniformly executed on all stories, but in irregular courses of unequal height. The surfaces of the individual ash-lars are separated by sunken joints of small depth, and like the ash-lars are coursed to form pilasters, have chiseled margins

and uniform treatment of the subjects and as a result of the local mode of expression, rather than as a consequence of translation and glosses. What is noticeable here also is the use of Roman letters, without resorting to "phonetic" or "phonetic" letters. The letters are only on the surface, but in the native sense; lower and bold letters, even containing a few letters, with the richer composition in the two lower stories with the main architecture, which is a mass between one on the left and one on the right and one intended for the right side of the building. The letters and glosses have no connection with the building, and in this sense is the native of the native building.

The letters are arranged like those of Gothic letters, and I larger extending across the whole of the letters, rather than a few letters. This arrangement again occurs in each story; between the horizontal members are inserted the letters. The letters of the letters are rather awkward and not used, those of the Gothic letters likewise, the corners of the main cornice as well as the profile of the architrave beneath it are rather coarse. The windows are divided by little columns, corresponding to which are letters on the letters; above is an architrave, over which are the letters round architrave as the letters of the semi-circular-headed windows. The letters are made somewhat; the letters are waiting up for the letters and the entire circle in the tympanum were formerly used, as the two outer windows show. The entire letters would give a different impression, if these letters were removed, which shows it to appear heavy and flat, and the intended relation between the letters and the letters in the letters -- the equilibrium in the effect of contrast in the letters, thus as now at Palace Fifth and others.

The treatment of the letters of the letters also makes itself felt in the letters of a more serious style, which is a letters, only a few and elevated letters windows. The letters in the ground story. The division

and finely pointed panels.

There is no rustication here; with this pattern-like, plain and uniform accenting of the surfaces must be understood as the local mode of expression, rather than as a combination of rustication and pilasters. What is undertaken here also occurs on Roman buildings, without terming as "rustication" the plain ashlar separated by sunk joints. Alberti bases his gradation of the facade only on the orders, that he employs in the antique sense; lowest the bold Doric, then omitting the Ionic, with the richer Corinthian in the two upper stories with the main entablature, which is a mean between one only designed for the upper story and one intended for the entire height of the building. The belts and pilasters have no functions, they are not required structurally; they merely contribute a slight ornamentation, and in this sense is the motive of the facade enduring.

The belts are arranged like those of Gothic palaces, the larger extending across as window sill courses, under them being a flat decorated frieze with a finely moulded architecture beneath this. This arrangement again holds in each story; between the horizontal members are inserted the pilasters. The capitals of the Tuscan order are rather awkward and confused, those of the Corinthian likewise, the consoles of the main cornice as well as the profile of the architrave beneath it are rather coarse. The windows are divided by little columns, corresponding to which are pilasters on the jambs; above is an architrave, over which commence the great round arches and the little arches of the semicircular-headed windows. The arches are made concentric; the now partly walled up semicircle and the entire circle in the tympanum were formerly open, as the two outside windows show. The entire palace facade would give a different impression, if these fillings were removed, which allow it to appear heavy and flat, since the intended relation between openings and solid masses is lacking -- the equilibrium in the effect of contrast is destroyed, just as now at palace Pitti and others.

The requirement for the safety of the occupants also makes itself felt on this building of a more refined type, when as on Palace Guadagni, only small and elevated square windows animate the wall surfaces in the ground story. The division

... which surface is treated in the mode of some polychrome
... and the body for window openings at a
... of the facade and not wanting in the upper story-
... and likewise the same was supported from a console wi-
... in flowing bands, but it is not here placed on the scale of
... the building, but rather the expressive of the middle story a
... and on the axis of a window. The facade system of the palace
... is given in Fig. 240, with a window detail at larger scale in
... 241.

Like the Palace previously mentioned, this was called into
... existence by a monarch, descended from an eminent family of
... agents, who governed wealth and culture, and according to del
... this was built in the time of 1445-1451, as taken from the
... text references. It is attributed to Albert and to Rossellino.
... A comparison of Vasari names Rossellino as the maker of
... the model; others would also be Rossellino the main architect-
... here, the modelling and ornamental details, according to Albert-
... in only an influence on the facade. One might well regard Al-
... (1445-1451) as master of the facade which is called
... and the main cornice, were not the Palace in Pienza built by
... work, I adhere firmly to Albert as the master for Palace Pr-
... official, even if the evidence in the court speaks against him.
... the facade which often is no longer recognizable; but there
... which is visible, that the facade must have been executed wid-
... on by 4 years.

... (1445-1451), who cannot be known as architect and painter.
... and was with his presence limited on a question of style mas-
... one and architect, built in the years 1445-1451 (Pienza order
... 1445-1451) Pienza Pioncinian in Pienza after the same scheme.
... as Albert and Pienza Pioncinian in Pienza in 1451 years earlier.
... the Pienza facade might be termed a Pioncinian, to the con-
... one of the two palaces were Pioncinian certain; but since both
... Albert and Rossellino, are named as architects, we do-

by pilasters commences above the plinth bench on a substructure, whose surface is treated in the mode of opus reticulatum and divided by pedestals corresponding to the pilasters. The iron standard holders and the hooks for window shutters at the height of the imposts are not wanting in the upper stories, and likewise the stone arms supported from a console with flowing bands, but it is not here placed on the angle of the building, but under the architrave of the middle story and on the axis of a window. The facade system of the palace is given in Fig. 240, with a window detail at larger scale in Fig. 241.

Like the Palace previously mentioned, this was called into existence by a merchant, descended from an eminent family of dyers, who combined wealth and culture, and according to del Badia was built in the time of 1446-1451, as taken from the tax registers. It is attributed to Alberti and to Rossellino.

A contemporary of Vasari names Rossellino as the maker of the model; others would allot to Rossellino the main entablature, the mouldings and ornamental details, allowing to Alberti only an influence on the facade. One might well reject Alberti (1404-1471) on account of the Tuscan pilaster capitals and the main cornice, were not the Palace in Pienza built by Rossellino 12 years later without dispute. According to that work, I adhere firmly to Alberti as the master for Palace Rucellai, even if the accades in the court speak against him.

The former ground plan is no longer recognizable; but this much is visible, that the palace must have been extended wider by 4 axes.

138. Palace Piccolomini in Pienza.

A contemporary of Alberti, the Florentine Bernardo Rossellini (1409-1468), who became known as architect and sculptor, and who with his brothers carried on a business of stone masons and builders, built in the years 1460-1462 (others prefer 1459-1463) Palace Piccolomini in Pienza after the same scheme, as Alberti erected Palace Rucellai in Florence 12 years earlier.

The Pienza facade might be termed a plagiarism, if the origins of the two palaces were perfectly certain; but since both masters, Alberti and Rossellino, are named as authors, we shall not maintain the reproach.

The arrangement of the plinth, the pilasters, the belts and

windows in Pienza is the same as in Florence; except that in Florence a larger wall surface is left between the tops of the arches and the lower edge of the architrave of the belt, which there strongly contributes to make the facade appear more dignified.

The treatment of the facade surfaces is the same at both places; ashlar with rectangular sunk joints; the widths of the pilasters diminish harmoniously in the three stories; on the other hand in Florence the surfaces of the shafts of all three orders are uniformly made smooth, while in Pienza the ashlar of the Doric pilasters bear the sunk joints of the adjacent masonry, and are only dressed smooth on those of the Corinthian.

The friezes of the belts are low and plain; the main entablature has a high architrave, low frieze with consoles, very heavy cornice and too large a cyma, making it too heavy for the pilaster order of the upper story and too low for the entire height of the building. Likewise the lack of wall above the windows, where the crown of the arch directly adjoins the architrave, strikes the eye in an offensive way. Nothing of the grand movement of the Florentine building is to be found there, as well as of the good details of the window enclosures, or of the beautiful belts beneath them.

271 The Doric capitals lack the echinus, and the Corinthian are made too low and with inferior details. The horizontal transoms in the windows are without any mouldings; the upper one rests only above the impost, or better said, above the centre of the arch, thus injuring the circular forms of the great and little arches.

Were the building in Pienza 12 years earlier than that in Florence, then would one be surprised by it; but since the contrary is the case, this is difficult. I hold it rather to be an unskilful imitation, as a further evolution of its predecessors; and if Rossellino be taken as the master of the Florentine building, then the man later forgot, what he had known earlier. I do not place other buildings of the master, and among them particularly the Cathedral in Pienza, no higher than this palace, for they betray no greater skill, but rather are an indistinct groping and seeking for something, to which the master was unequal. Even when Pope Pius praised

...has no entire safety with him with 100 dollars
...and even have a total amount. When
his work was not thereby made more essential and added than
is it. ...never denounces, even if it comes from a per-
son of elevated rank, just as little as an art work is re-
jected in value by the claim of the inventor, as another person
...previously. ...in Vienna now
remains a poor copy of the original ...in 1870-
1871.

And yet of this ...at ...one thing is certain:
...as an indication of the more refined design of the master,
which is the reduction of the width of the ...in the
... (Fig. 240). The tapered diminution of the ver-
tical members of the ...of the ...is an advantage,
...and ...

A ...that was built in ...for the ...of ...
...and that ...to ...in ...
...not be passed over in silence here, since on its ...
...is rejected, and the ...in the main ...is
...rather than wide. ...

...constructed in like manner
... (Fig. 284), ...the same good ...
...to the ...of ...
...to ... (Fig. 150), which is ...
...from ... (Fig. 150-151). The ...
...the title of ...
...as ...; while in the ...
...by ...". The ...
...of ... (Fig. 152-
...with ...
...and then the ...
...
...from ...
...and the ...

the master so much, pardoned his exceeding the allotted sum of 50,000 crowns for the building by 8,000 or 10,000 crowns, assigned him "the first place among all the architects of the century," had his entire salary paid to him with 100 golden crowns additional, and even gave him a festal garment. Then his work was not thereby made more beautiful and better than it is. Praise never beautifies, even if it comes from a person of elevated rank, just as little as an art work is reduced in value by the blame of the ignorant, as emperor Marcus Aurelius said previously. Palace Piccolomini in Pienza now remains a poor copy of the dignified Palace Rucellai in Florence.

And yet of the palaces at Pienza must one thing be recognized as an indication of the more refined design of the master, which is the reduction of the widths of the pilasters in the upper stories (Fig. 240). The tapered diminution of the vertical members of the surface of the facade is an advantage, that merits mention and recognition.

A Palace that was built in Siena for the nephew of Pope Pius II, and that comes nearest to Palace Strozzi in Florence, should not be passed over in silence here, since on it rustication is rejected, and the frieze in the main entablature is animated by rectangular windows, taller than wide. Instead of the architraves common elsewhere and the cornice of cut stone projecting 4.9 to 5.1 ft., constructed in like manner as on Palace Strozzi (Fig. 234), it shows the same good ending by an astragal. According to the statement of del Bada, it was set from July to Sept., 1500, which in Siena should date from the time of 1500-1520. This unconfirmed date is given by the great Work on Tuscany. The title of the corresponding plate names B. Sossellino as author; while in the subscript we read, "executed by other masters." The facade bears the shields of arms of two Popes, Pius II and Pius III (1458-1503), the round-arched windows have concentric arches and small piers with projecting half columns as middle supports, that receive first an architrave and then the arch. The window openings in the uppermost story are divided by stone crosses. The ground story measures 32.8 ft. from sidewalk to window sill belt, the second story 23.5 ft., and the third story 23.0 ft. to the top of the astragal, the entablature with the

302 frieze occupying 10.3 ft.

303 On Palace Strozzi at Florence the consoles of the main cornice were set in 1500, the arms of Pius III in Siena are marked with the date of 1503, and he died in Oct., 1503. Therefore who was then the inventor of this surprising construction of the cornice? Only that of the Strozzi cornice is usually mentioned. Why are men silent concerning the other? And what artist found the better solution of the closure of the windows? The creator of Palace Rucellai in Florence or that of Palace Piccolomini in Siena? We give both solutions in Figs. 232, 234 and 241. (See Note 107).

Thus we see two routes and two gateways open, through which the Tuscan Renaissance begins its march. Both were left in the course of time, to be sought again. Art and fashion, changing tastes, an altered mode of living, pressed forward and demanded changes.

Göller (*Asthetik der Architektur*) recognizes in the "tiring of the feeling for form" alone the impelling force, to which we owe progress from the primitive ornamental forms of the ancient peoples, and Jacob Burckhardt says:-- "Fashion was stronger than all else!" (Cicerone, 1860, p. 9). I believe both.

An experiment in the path sketched by Brunellesco, Michelozzo or Cronaca was made in the city of Rome by Giuliano da Majano (1432-1490), when his authorship could be assumed as certain, in the great Palace di Venezia (Fig. 242), but in the simplest manner by an ordinary treatment of the facade surfaces, constructed of split stone and coated with gray Pozzulan stucco. The belt courses and the window pedestals of the ground story are of travertine, those of the second and third stories being of white marble. The plinth bench is wanting; but the subdivision of the facade by simple window sill belts, the rectangular windows with stone crosses in the main story are still mediaevally conceived, and in the highest degree is this the case for the heavy cornice with consoles, with round arches and battlements, that in their massiveness are proportioned to the height of the defensive structure beneath, such as attempted on Palace Strozzi and Palace Medici-Riccardi, translated into the classical. The court architecture is directly borrowed from the antique -- here the Colosseum -- but

11.9 ft. with an axial distance of the windows at 88.0 ft. from center to center. It rises in three stories to about 85.8 ft. to the top of the main cornice, which itself is set in 14.8 ft. high and projects 2.5 ft. The windows of the principal story occur at 85.0 ft. above the sidewalk on a second-story level. On the lintel of each window is carved a small relief of a figure with wings and rays, regularly repeating an old Venetian type. The inscription "Pope Paul II, Venetian," and on the cornice band of the cap is the signature "P. M. 1845." But the former of the two is the only one which is repeated on the cornice of the main portal 38.5 ft. high and decorated by columns and pediment, which is not placed exactly in the middle of the building. (See illustration in bibliography, Vol. I, p. 115.)

It is drawn to the ornament cap of the portal (115 ft. high) by a series of steps from the same level. It is not a simple doorway but a principal entrance doorway of St. Francis at Rimini. At the same place it is also further noted, that according to Vasari, the bell of the Palazzo was similar to that of the Palazzo in Rome. Giovanni, Giovanni, Giovanni in Bologna. St. Marco were built in 1440, the Palazzo Farnese about 1480 on another model. In the magnificent work "San Sebastiano" by Dr. Hermann Eggert--A colonial edition of the early Renaissance--Venezia, 1899--p. 115--p. 116, the building is given as the owner, and the building during the time from 1445 to March, 1481. Paul II died in 1491.

According to what is known of the first epoch of 1440-1480. This one cannot more fully enter into the question of architecture. According to the memorial medal of 1485, the principal story of the new structure was still equipped

304 with skill and good fortune. The round-arched arcade resting on piers with projecting half columns formed the most beautiful court in the city of Rome, surrounded by vaulted porticos.

The length of the facade of Palace Di Venezia amounts to 4419.9 ft. with an axial distance of the windows of 23.0 ft. from centre to centre. It rises in three stories to about 85.3 ft. to the top of the main cornice, which itself is again 14.8 ft. high and projects 2.5 ft. The windows of the principal story begin 36.0 ft. above the sidewalk on a continuous belt. On the lintel of each window is carved a small shield of arms with mitre and keys, regularly repeating at all windows the inscription "Pope Paul II, Venetian," and on the echinus band of the cap is the antique egg moulding. But the climax of the most refined Early Renaissance ornamentation is formed by the noble portal 29.5 ft. high and decorated by columns and pediment, which is not placed exactly in the middle of the building. (See illustration in Betarouilly, Vol. 1, pls. 73-78).

In the 5th edition of the Cicerone attention is particularly drawn to the pediment cap of the portal (1464). May not yet others be named from the same early time? Should not also the portal of Palace Vitelleschi at Corneto be mentioned, or the principal entrance doorway of S. Francisco at Rimini? At the same place it is also further stated, that according to Vasari, the builder of the Palace was Giuliano da Majano (1432-1490), although he was never authenticated as having worked in Rome. Caprino, pietrasanta, Giuliano da Sangallo were only contractors. The great Palace and the portico of S. Marco were built in 1445, the Little Palace after 1466 by another master. In the magnificent work "Zur Gaugeschichte des Palazzo di Venezia" by Dr. Hermann Egger-- A colossal structure of the Early Renaissance -- Vienna, 1909 -- Pietro B 317 Barbo, afterwards Pope Paul II, is given as the owner, and as the building period the time from 1455 to March, 1491. Paul II died in 1471.

According to Egger no document relates to the first epoch of 1455-1466. Thus one cannot more fully enter into the question of authorship. According to the memorial medal of 1455, the principal story of the new structure was still equipped with Gothic windows after the model of the Cardinal's Palace

and a contract was closed with the building contractor for
from want. The expense of the Gothic windows for these ex-
posed with horizontal heads and finished stone crosses was
paid by the men, and was required by the taste of the fi-
nal. When Paul III died (1471), the main cornice of the Pala-
ce was only completed to the northwest angle. To the north
side the problem of carrying the unfinished work to an end,
which was done by creating the costly arcade of
the great court. 110

Note 110. One should not forget, that Giulio was connected
with the originators of the Renaissance movement.
For the second building period, there completely exist in
Rome, however, the names of the architects and stone-masons
according to the oversight of Giacomo da Pietrasanta. The
use of the window openings, and which were and remained in
this, the building called "la basilica", the favorite sojourning
place of the Pope, and which was the same as the
and for the fashion, only furnished with antique details; the
they took no essential part of the new style, and were
furnished with the same as the Colosseum already
completed in the Renaissance fashion of Pope II beside the en-
tire of the building, and which was the same as the
which was not forgotten here, thus determining the architecture
over the Colosseum does not occur on the Colosseum, but indeed
on the architecture at Rome and Africa.
184. Palace of the Pope in Rome and Palace of the Pope in

no more called by Raphael (1483, 1484) and still existing
a certain uncertainty in decision, as the wall course itself be-
came. The various elevations in the antique church is ap-
parent of the Renaissance and in a not interesting way. It re-
sults in the German Renaissance with Elias Holl and Schöner-
185. Palace of the Pope in Urbino.

of Domenico Copranica. The inscription tablet inserted in the eastern front bears the date of 1455. For the new structure the Florentine Bernardo di Lorenzo was installed in 1466, and a contract was closed with the building contractor Rasi from Narni. The exchange of the Gothic windows for those executed with horizontal heads and finished stone crosses was made by the two men, and was required by the taste of the time. When Paul II died (1471), the main cornice of the Palace was only completed to the northwest angle. To the heirs fell the problem of carrying the unfinished work to an end, which was done by ceasing to continue the costly arcades of the great court. 110

Note 110. One should not forget, that Giuliano was counted with the originators of the Renaissance movement.

For the second building period, there completely exist in Müntz' documents the names of the architects and stonemasons laboring under the oversight of Giacomo da Pietrasanta. The Gothic stone cross windows, that made possible a secure closure of the window openings, and which were and remained in use everywhere in Italy (Fig. 242, the Old University in Perugia, the hunting castle "La Magliana", the favorite sojourn of Julius II and of Leo X), were retained for these reasons and for the fashion, only furnished with antique details; that they form no essential part of the new style, and that "the decided step of copying the arcades of the Colosseum already occurred in the benediction loggia of Pius II beside the entrance of Old S. Peter," may be stated in general. Only it should not be forgotten here, that returning the entablature over the columns does not occur on the Colosseum, but indeed on the Amphitheatres at Nimes and Arles!

134. Palace Mancini in Cortona and Palace Nobile in Montepulciano.

Palace Mancini at Cortona and Palace Nobile in Montepulciano were built by Sangallo (Figs. 243, 244) and still exhibit a certain uncertainty in decision, as to what course shall be taken. The vertical subdivision in the antique sense is attempted in Montepulciano and in a not interesting way. It reappears in the German Renaissance with Elias Holl and Schoch!

135. Palace Ducale in Urbino.

Palace Ducale in Urbino, at which was engaged the architect

1885) and George Bonelli (also named architect, 1885-1886).

with the individual street houses, i.e., neither arranged by
The splendidly executed court houses in the lower
story exhibit the round-arched windows of columns, and in the
upper story again are rectangular windows, with a combination
of the brick wall pieces by Germanian pilasters, and a corner-
in corner after the style of the Colosseum. Woodward and
of several values are the doorway enclosures in the halls, wr-
oat from the fine grained yellowish limestone first floor
Greece after the perfectly beautiful drawings, and likewise
the same limestone; interesting is also the polychrome tra-
scent of the stone door frames with gold and blue, the char-
ing decorations of the palace chapel and of the library. 5
for the exterior comes the ornamentation especially in
so the lodges inserted between the round towers (figs. 245).

passage, with a Arnold see beautifully and correctly preserved
and on the work. 111 Then the following the square, round, and
number thereof in Gothic, 111 on Palace, as well as fig. 246.
es of Culture -- "Urbino." At this time it is changed to a
court for an official of the Academy. Also see T. Redford-
corner, p. 124 et seq.

1886. Palace Ducal in Venice.

The Palace Ducal in Venice, a first fruit of the building
of great Venetian architecture, with its columnar court and
the same entrance of the elevation as in Venice (see fig.
Pellmann and Bense, p. 149 in "Die Villa Farnesina in Capri")
especially the illustrations by Bense, as well as also
the Palace of Andrea Doria in Genoa, and elsewhere,
and still better especially in Germany on the basis of
the great founders of the Renaissance. In Germany almost
rooms of the Palace at Paderborn and elsewhere furnish-
by in the elevation with the detail forms of the German Ren-
aissance (figs. 250, 251). 112 A technical and complete manual

Francesco di Giorgio from Siena (1439-1502), also known as m
 306 military architect and engineer, then Luciano da Laurana (1468-
 1482) and Baccio Pontelli (also named Pintelli, 1450-1492),
 who had charge of the internal works, must be taken up here
 with its undivided street facades, i.e., neither animated by
 pilasters nor columns, and its in part horizontally covered
 windows. The splendidly executed court facades in the lower
 story exhibit the round-arched arcades on columns, and in the
 upper story again are rectangular windows, with a subdivision
 of the brick wall piers by Corinthian pilasters, and a conso-
 le cornice after the style on the Colosseum. Wonderful and
 of eternal value are the doorway enclosures in the halls, wr-
 ought from the fine grained yellowish limestone from Monte C
 Cesana after the perfectly beautiful drawings, and likewise
 the state fireplaces; interesting is also the polychrome tre-
 atment of the stone door frames with gold and blue, the char-
 ming decorations of the palace chapel and of the library. F
 or the exterior comes into consideration architecturally al-
 so the loggias inserted between the round towers (Fig. 245),
 the splendid marble bay window, a rarity in the Italian Rena-
 issance, which Arnold has beautifully and correctly represen-
 ted in his Work.¹¹¹ Then see likewise the street facade and
 further thereon in Section XX on Palaces, as well as Fig. 246.

Note 111. Arnold, F. *Die Herzogspalast in Urbino*. 1857.
 P. Schubring has surveyed it in his little book -- "*Localiti-
 es of Culture -- Urbino*." At this time it is arranged as a c
 cabinet for an official of the Academy. Also see P. Redtenb-
 ocher. p. 134 et seq.

136. Palace Ducale in Gubbio.

The Palace Ducale in Gubbio, a first fruit of the buildings
 of Duke Federigo di Montefeltro, with its columnar court and
 the same arrangement of the elevation as in Urbino (see Th.
 Hoffmann and Patzak, p. 140 in "*Die Villa Imperiale in Pesaro*,"
 particularly the illustrations by Laspeyres, as well as also
 the Palace of Alessandro Sforza in Pesaro), are structures,
 that still betray uncertainty in carrying out the ideas of t
 the great founders of the Renaissance. The otherwise clear
 facade of the Palace at Pesaro exhibits the mediaeval tenden-
 cy in the elevation with the detail forms of the dawning Ren-
 aissance (Figs. 20, 21).¹¹² A technical and equally dismal

esthetic decoration thereof is given by A. Schubring, p. 47.
 307 That we do not go further into this here will be easily understood. Our Fig. 22 must suffice, with reference to a saying of Aristotle (Politics, Book IV, Chap. 1, and Book VIII, Chap. 6), that I have given in the preface of the *Baukunst der Griechen*, 3rd edition. (Part II, Vol. 1 of this "Handbuch"). It may likewise be extended to innumerable contemporary volumes of the so-called "culture works" in the domain of architecture.

Note 112. The new Palace was built by Alessandro Sforza in place of the Palace del Comunita. An intarsia in the choir of Church S. Agostino at Pesaro shows it in its completeness, with battlements and a balcony on Via dei Fondachi (Corso Sept. 11), that that was later transferred to the other end by Guidobaldo. In the second half of the last century the existing great cornice was placed instead of the row of battlements. In Part No. 42 of *Italia Artistica*, Giulio Vaccaj (1909) says: "The intarsia in the choir represents the Palace, now the Prefettura, and he also gives an illustration of the intarsia, which shows the peculiarities mentioned for the palace; battlements, console cornice, five windows, six arches and the angle balcony consoles. On page 23 he also states, that the windows of the House formerly Leonardt had straight caps. Then by him is also confirmed the document, according to which in the year 1465 Duke Alessandro in Mantua was requested to send Laurana to Pesaro for some days, in order to give an architectural opinion there.

The same facade system is repeated, except that in the arcade columns now appear instead of piers, and the wall surfaces in the upper story between the windows are animated by flat pilasters. (See the court architecture of the Palaces at Urbino and Gubbio, Palace del Consiglio at Verona, Foundling Hospital in Florence, as well as Hospital del Ceppo at Pistoja (Figs. 22, 23) with the famous majolicas of Robbia.) Everywhere the Palaces of the Community at Cremona, Como, Piacenza etc. are the models and also give the leading architectural motive for the new style.

It vanished with Alberti's actual interference. His art style went into the school by way of the antique Roman temple
 308 or chiefly of theatre architecture. The love of ornamentation

The "art of proportions in general" understood by Brunelleschi as a system of the architectural proportions for a size, was not remained satisfied with what produced by the construction alone and by the established proportions of the building; the ornamental again attained value, at that point, then more seriously and consciously. What was altered was the proportion of well known elements of the structure, which however originally they were exposed, and retained so as with the reality, and were structurally not restricted.

It is proclaimed, that in the 15th century a new and highest flight of the "art of proportions" began, that especially in the 15th century, when the question of proportions, when the same was not already known, began to be a problem, when, when and many other things in the 15th century, when that is when the great Italian architects succeeded? Was it not then anything essentially different, that Alberti and not previously proposed? Both authors get into the same frame, and both are not on that of Brunelleschi and his successors. Was the elevation of a temple by Alberti, or by Vitruvius, and which actually referred to the "ideal expression," and the respective mathematical relations for the interior alone? Is the new direction of the architectural masses concerned? Is the arrangement of the masses on Palazzo di Venezia at Rome, or on Palazzo Farnese at Rome, not equally correct? Only the treatment of the windows on the Cancelleria at Rome? If the treatment of the windows between the window openings is different. Even the heights of the stories and the axial distances between the windows, as well as their position on the wall, are not the same. But that now it was not only the opportunity is afforded to the artist and architect, besides the rational. The influence from Alberti passed into other hands, instead of the humanism as in the 15th century those from Urbino, Ferrara, Mantua and Genoa; the Venetian San Marco and Palazzo della Signoria, even if a also many others, as for example Palazzo San Marco and Palazzo Venezia, and Rome, known now to

produced in Upper Italy by brick architecture if did not join, as it also otherwise went aside from undivided masses.

The "art of proportions in general" introduced by Brunellesco separated from the architectural programme for a time, men did not remain satisfied with that produced by the construction alone and by the established subdivision of the building; the ornamental again attained value, at first timidly, then more strongly and consciously. What was adopted was the arrangement of well known elements on the structure, which however spiritedly they were executed, had nothing to do with its reality, and were structurally not required.

If it is proclaimed, that with the 16 th century a new and highest flight of the "High Renaissance" begins, that capricious love of ornament is rejected, and now comes "simple grandeur" in the series, then may the question be permitted, whether this was not already expressed better in the Tuscan, Si-
 enese, Umbrian and many palace buildings in Northern Italy, than that in which the great Bramante succeeded? Has he cheated anything essentially different, that Alberti had not previously produced? Both however yet stand on the same ground, and both are not on that of Brunellesco and his associates. Was the subdivision of facades by pilasters, belts, windows and gables actually reduced to the "simplest expression," and the decorative magnificence retained for the interior alone? Is the new distribution of the structural masses correct? Is the arrangement of the masses on Palace di Venezia at Rome, or on Palace Strozzi at Florence, not equally worthy and good, as on the Cancellaria at Rome? Only the treatment of the wall surfaces between the window openings is different. Even the heights of the stones and the axial distances between the windows, as well as their repeated arrangement at equal distances are approximately the same. But that now it can be affirmed that opportunity is afforded to the refined and beautiful, besides the rational. The inheritance from Alberti passed into other hands, instead of the Tuscans appear as leading spirits those from Urbino, Bramante, Raphael and Genga; the Veronese San Micheli and Falconetto rise high, even if a also many others, as for example Jacopo Sansovino and Giulio Romano, particularly engaged in Venice and Rome, know how to dominate the field.

In the year of Brunellesco's death (1446), Florence was born
in a country seat near Urbino. "In a large building for a
house he was born." was also in the building of the
house. There was in Florence, as then worked in
local work, where as his original work in local work
here are recorded the cancellaria, Palace of the
Palace. What no trace exists in the architectural history
generally speaking, there is no trace of it. The in fact
may unexcelled remain the outstanding efforts of the
masses, the beauty of the building, and the richness of the
detail. I must not say that the building is not
by the building of the building within the building masses,
from the original building and various buildings of the
building. The proportion of the building is left
building I cannot; to determine this is generally left
to the architect. Palace of the building is not
building. I must not say that the building is not
is + 2 axes with a building and building of the building.
The main building of the building is 22.5 ft. long and 83.0
ft. high without the roof; Palace of the building is 11.5 ft. long and
and 70.5 ft. high. The building, building of the building, building
is collected as could be seen by the building by the building
building of the building is 22.5 ft. wide, with
a proportion of 22.5 ft. The building, building to the building
building and not even building, but the building by the building
building, as the building of the building is 22.5 ft.
by the building of the building. The building, building and building
building by the building, building and building, building and building.
building the building would not be building on the building.
building the building building in building. Building has building
building its building and building is building. Building
building the building is building of the building, building
building, as in building building. Building building building
building building building, building and building building
building the same building, building the building building
or building. Building building building building building
building and low building building, building building building
building. For building no building building exist. Building building
building. Building building, building building building building

137. Palaces of Bramante.

In the year of Brunellesco's death (1444), Bramante was born at a country seat near Urbino. "In a deep feeling for proportions lay his greatness." Not also in the refinement of the detail forms? First engaged in Lombardy, he then worked in papal Rome, where as his principal works in secular architecture are regarded the cancellaria, Palace Giraud and Palace Vatican. What do these exhibit in new architectural ideas? Scarcely anything, that did not already exist. But in their way unexcelled remain the contrasting effects of openings and masses, the beauty of mouldings, and the refinement of the detail members. I understand first under the former the happy distribution of the openings within the structural masses, then the balanced horizontal and vertical subdivisions of the facade surfaces. The proportion of length to height of the building I abandon; to determine this is generally not left to the architect. Palace Giraud with 7 axes does not stand higher artistically in this respect than the Cancellaria with 12 + 2 axes with approximately equal heights of the buildings. The main facade of the Cancellaria is 294.7 ft. long and 82.0 ft. high without the roof; Palace Giraud is 184.5 ft. long and 70.9 ft. high. The greater length of the former, Bramante believed he could apparently be able to conceal by the arrangement of two projections at the ends 30.2 ft. wide, with a projection of but 1.3 ft. The entrance doorways to the palace are not symmetrically placed, but are located by the ground plan, as the arrangement of the window openings is fixed by the height of the stories. The external walls are stiffened by the transverse walls and statically made more secure. Thereby the engineer would not be required on the building. Did the architect follow him in all things? Reason has performed its duty and the play of the imagination begins. Nothing restricts the architect in the animation of the surfaces, he has a free hand, as in the antique Roman. Brunellesco and his school declined this, Alberti and his followers adopted it under the same conditions, that the engineer had created on the structure. Alberti accepts the vertical intermediate subdivision and low relief for animation, and Bramante did the same. For both no presuppositions exist, they have free control. Men assume today, that the story belts correspond

...to the location of the story lines, and the ...
on all sides is the usual height of a room of about 8 ft.
to 8.8 ft. With this height the design is ...
is and ... with his ... no ...
ly on the ... The ... of ... on the
... up to 4.5 ft. in ... It ...
... in the ... one must ... (...)
... from a raised platform in the window could one look out
... The practical difficulty is ... to the
... of the ... But this ...
... is at the ... of ... The window ...
... and ... on the ... The ... for
... only a ... window ...
... and the ... The ...
... is ... The ...
... The ...
... 28.5 ft. above the pavement, ... as ...
... on the ...
... of ... and ...
... but ... only ...
... their ...
... is ... and this can be ...
... as ... in ...
... with such ...
... treatment or ... which occurs by means of ...
... of ...
... any connection with ...
... of the ...
... the light ... is to be ...
... and ...
... on the ...
... as in the so-called ... which can be regarded as a
... of the vertical ... The distance of the
... on the axial distance and
... and therefore their ...
... with the so-called coupled ...
... The ...
... on the ...
... on each ... and the ...

about to the location of the story floor beams, and the window sill belts to the usual height of a parapet of about 2.6 to 3.3 ft. With this belief the design is arranged. Bramante and others with him recognize no such restrictions, or only on the court facades. The heights of his parapets on the main facades are up to 4.9 ft. in height. To pass from the floors to the window bench one must ascent steps (Fig. 25). Only from a raised platform in the window could one look out on the streets. The practical utility is subjected to the feeling for proportions of the street facade. But this artistic freedom is at the cost of innate truth! The window pedestals are firmly retained on the contrary. The opening for light receives only the finely membered enclosure and the upper projecting cap. The narrow mediaeval double window is abandoned. The belts are not structural members but sink to surface decorations. The simple console cornice, calculated in details for a distant effect, at its height of 82.0 ft. above the ^{street} pavement, employs no ornaments, as these were likewise suppressed on the Colosseum. Again well considered. The coursing of the wall ashlar is shown, the ashlar have cut margins, but their panels project only $\frac{3}{8}$ inch, therefore they do not harmonize. Consequently their designation as rustication is badly chosen, and this can be said of such just as little as for Palace Rucellai in Florence. But the windows with such great axial distances require a more extended treatment or separation, which occurs by means of flat projecting pilasters, that stand on both sides at equal distances from the window pedestals. Any connection with the latter is suppressed, for no useless arrangement of the architectural members about the light openings is to be created. That was technically and artistically reasoned and also adhered to. As if originating of itself on the broad wall surfaces is the so-called rhythmic bay, which can be regarded as a doubling of the vertical subdivision. The distances of the pilasters from each other depends on the axial distances and the dimensions of the windows, and therefore their arrangement must not be confused with the so-called coupled pilasters. For this reason the pilasters on Palace Giraud are placed closer than on the Cancelleria. The Rhythmic division first commences on each above the undivided lower story and the beaut-

...ing ... these will not ...
...ing ... the ...
...to the effect of the ...
...the local ...
...for the ...
...of the ...
...the ...
...The ...
...from the ...
...to the ...
...did not ...
...the ...
...only possible ...
...with the ...
...grey ...
...the ...
...are again ...
...the ...
...I could ...
...of the ...
...the ...
...in the ...

...the ...
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...the ...
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...the ...
...the ...
...the ...

beautifully gradaded plinth. Thus the ornamental subdivision of the facade, not based on anything structural, becomes something organic, that will not and must not recall supports and filling panels. Likewise the colors of the materials have contributed to the effect of the facade. The grayish-yellow travertine determines the local tone, the white marble was necessary for the wonderfully refined ornamentation of the window pedestals of the principal story, for only in this material could the ornamentation be expressed. All this is artistically finely reasoned and weighed. The flat ornamentation is a reaction from the brick decorations of Upper Italy, which with regard to the peculiarity of the material and its technical preparation, did not permit strong projections. The means of expression were given, but their skilful use was only possible to one of the mighty. The wonderfully harmonious construction with the shafts of the antique columns of gray granite, the capitals and archivolts of white marble, the window pedestals and cornices of light stone, the wall surfaces faced with reddish-yellow bricks, are again the results of the same consideration. The stairs to the stories remain as simple stairs for passage, certain apartments, that I could still see in the year 1866, were gems of a beautiful internal decoration. (Fig. 26, ground plan). What is said is true of the great internal court and of the main facade next the Place, but not of the two end facades, and of that lying in the rear, which are inferior.

138. Palace Vatican.

To Bramante likewise fell the grand problem of the extension of Palace Vatican (Fig. 248). Besides the beautiful court of S. Damaso with the loggias of Raphael, there was particularly the great rear court with the garden della Pigna, which portion of the plan should receive the stamp of the grand, still never seen.

Near the cathedral of S. Peter, the Borgia Apartments¹¹³ and the Sistine Chapel were built under Nicholas V; by Innocent VIII, and about 1/5 mile from them was already erected the pleasure house Belvedere after the plans of Antonio Pollaiuolo, when Bramante took up the problem. To construct a connection of this with the other existing parts of the building by a portico arrangement, that should enclose a court 1004 ft.

long and 246 ft. wide was his idea, which was also executed so far as concerns the connecting porticos. Connected with these was the previously mentioned court of S. Damaso, whose arrangement was designed with beautiful porticos and open loggias in the upper story, but only built after the death of the master. (See drawing after Heemskirk in Fig. 33.).

Note 113. Ehrle, F. & E. Stevenson. *Gli Affreschi del Pinturicchio nell Appartamento Borgia del Palazzo Apostolico Vaticano*. Rome. 1897. Plan. Chap. 1. p. 10).

The low lying court of the Belvedere, with the segmental ending of one of its ends, was to be separated by a theatre stage with intermediate broad flights of flat steps and a strip of garden behind it, from the higher garden of the fountain of Pope Julius III, an arrangement in which two stairways of two flights each with broad steps must form the transition. The grand motive of the niche at the other end should form the termination of the design, together with the connecting corridors on both sides from the Borgia Apartments to the residence of Paul IV and the Villa of Innocent VIII. This is to be recognized on an etching of the year 1565 (representing a tournament in that court), and what Simil¹¹⁴ gives in his project of the restoration of the court of Bramante,¹¹⁵ nearly corresponds to the glowing words in Burckhardt's "Cicerone"¹¹⁶ on the arrangement planned; "conceive the transverse structure of the Vatican library and of the Braccio nuovo (new wing) removed, in their places bend colossal double ramps, that lead from the lower court up into the said garden; place instead of the side galleries, which only exist in a mongrel transformation and partly walled up, those grand forms of unbroken arched porticos and wall surfaces, that Bramante conceived, thus would arise an entirety, that has no equal on earth. One might easily excel in magnificence and effect the details of brickwork with a moderate arrangement of belts and pilasters, which Bramante partly employed and partly intended; but for the great entirety it was conceived by him as almost perfectly beautiful. It is further terminated by a principal form, before whose imposing presence any middle structure of later palaces would appear mean and contracted, however great and rich it might be. We mean that colossal niche with half dome, above which extends a semicircular colonnade with a ter-

and at the altar.

and placed in the wall, not only a small portion of the original
Nicholas V (1446) resolved to make Sixtus Vatican and the
origin of the different parts of the chapel.

For convenient consultation may serve the following notes on
Sixtus IV, architect, with a clear height of 12.4 ft.

of a convenient doorway lying in a circular lateral room
as shown to receive and support the dome -- a four-sided
chamber and the ceiling of the octagon is the same
columns. When entered the inclined ceiling forms like arch-
top in the different sections by 8 Ionic, Ionic and Corinthian
columns lower down the columns, whose lower section is smooth-
lined, and the inclined ceiling is formed by a series of
decorative of sculpture is still the beautiful and finely
and the columns are tall and their topography -- " --

and shortly a second volume of the history of the Vatican,
they said by the author: -- "The history of the Vatican of
1481, the present plan of the Vatican Palace. There is a fur-
ther description of the Vatican (p. 10), and we illustrate in fig.
above is the magnificent work of the architect Bramante
A general representation of the plan of Palace Vatican is

Figure 1200. p. 56. Note.

Figure in the Vatican. See Burckhardt, J. Der Constantin etc.
of by Bramante and gave the chief motive of the golden delin-
especially in the East Indies; finally with magnificent effe-
in more general and common use on the buildings of Islam,
in Rome; as an echo on the facade of S. Marco in Venice;
etc.; then in the Christian period on the facade of Theodoric
again found on the existing front of the Baths of Diocletian
in Rome served as the lateral part of the church. They are
interior with half domes on papyrus, for example, one of which

Note 116. Edition of 1880, p. 306.

1880-1890.

Note 115. See plates 1, 2 of the court of the Belvedere.
Note 114. See the same.

to a new building.

terminal pediment like a temple. It is indeed now but a terminal decoration; but it might be the most effective entrance to a new structure."¹¹⁷

Note 114. See the same.

Note 115. See plates 1, 2 of the court of the Belvedere.
1503-1590.

Note 116. Edition of 1860, p. 306.

Note 117. On this occasion, note the Roman use of great niches with half domes on facades, for example, one of which in Rome served as the imperial box at the circus. They are again found on the existing front of the Baths of Diocletian etc.; then in the Christian period on the Palace of Theoderic in Ravenna; as an echo on the portals of S. Marco in Venice; in more general and colossal use on the buildings of Islam, especially in the East Indies; finally with magnificent effect by Bramante and made the chief motive of the garden della Pigna in the Vatican. See Burckhardt, J. Der Cicerone etc. Basle. 1860. p. 56. Note.

A general representation of the plan of Palace Vatican is given in the magnificent Work on the frescos of Pinturicchio in the Borgia Apartments (p. 10), that we illustrate in Fig. 248, the general plan of the Vatican Palace. There it is further said by the author:-- "Having the intention of publishing shortly a second volume of the history of Palace Vatican, and to complete the front and rear topography - - - ."

3/4 Technically of importance is still the beautiful and gently rising winding ramp without steps by Bramante in the external square tower near the Belvedere, whose inner string is supported in the different stories by 8 Doric, Ionic and Corinthian columns, where between the inclined strings formed like architraves and the capitals of the columns are inserted triangular blocks to receive and support the former -- a masterpiece of a convenient stairway lying in a circular internal room 29.1 ft. diameter, with a clear height of 12.7 ft.

For convenient orientation may serve the following notes on the origin of the different parts of the structure.

Nicholas V (1450) resolved to make Palace Vatican the greatest palace in the world, but only a small portion was completed at his death.

Sixtus IV built the Sistine Chapel in 1478.

...court, including the chapel around corner S. ...

...III in 1840 and the chapel ...

...V built the chapel (1840-1841), which ...

...the chapel was erected by ...

...of the chapel and the chapel ...

...placed the chapel (1841) after the design of ...

...

...and the chapel ...

...VII (1840-1841) and the chapel ...

...IX (1841-1842) and the chapel ...

...

...The chapel covers an area of about ...

...on 260,110 sq. ft. ...

...the number of about 1000 ...

...

...to what the chapel ...

...and the chapel ...

...in the chapel ...

...was ...

...in the chapel ...

...and the chapel ...

...the chapel ...

...

...the chapel ...

...the chapel ...

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...the chapel ...

Innocent VIII built in 1490 the garden house Belvedere, that Bramante under Julius II connected with the palace by a great court, including the loggias around court S. Damaso.

Paul III in 1540 had the Pauline Chapel erected.

Sixtus V built the Library (1585-1590), which separated in two parts the great court created by Bramante; in the court of the Belvedere and the garden della Pigna, Urban VIII (1623-1644) placed the Scala Regia (Fig. 164) after the design of Bernini.

Pius VI (1775-1795) built the hall of Croce Greca, the hall Rotunda and the hall delle Muse.

Pius VII (1800-1820) had the Braccio Nuovo erected.

Pius IX (1846-1878) enclosed the fourth side of the court of S. Damaso.

The palace covers an area of about 592,040 sq. ft., of which 260,110 sq. ft. fall to the 20 courts, while including halls, chapels and rooms, the number of about 1000 is reached.

139. Palaces of Raphael.

To what the first masters created, Alberti and Bramante, are joined the works of Raphael in the domain of palace architecture; in Florence on Palace Pandolfini, of which only 4 axes were completed, Raphael was entirely free from what Alberti and Bramante desired. In small dwellings the latter had already avoided all surface decoration, and restricted himself to treat artistically in the simplest manner what the construction provided.

140. Palace Pandolfini.

The subdivision of the wall on Palace Pandolfini (Fig. 249) is no longer made by pilasters, but by flat recesses between the windows. The painter, who speaks here, composed his facade more according to the intentions of the Barocco group, even also with the rejection of their rudeness and mode of treating surfaces. The two stories are separated by a bold story belt, the upper story is recessed from the lower one, and the offset serves to receive the window balconies. Men would not trust these resting on consoles. Strength and safety, which are expressed on the entire building, should also prevail and be expressed here. The window openings exhibit the arrangement of the Roman shrine with half columns and pilasters, cornice and pediment caps, which are connected in t

the upper story by flat bands. The main entablature as a Corinthian console cornice is harmonized with the entire height of the facade, and dominates it as strongly as that on Palace Strozzi. The angles of the building are enclosed by ashlar quoins, the wall surfaces being stuccoed. The plainly treated plinth, the enclosures of the windows, belts and main cornice are of Florentine sandstone of grayish-yellow color. With equal right as the master of Palace Strozzi, Raphael neglected to carry an architrave above the front wall and terminated this by a round. He ornamented the frieze above this by a great inscription cut in stone instead of plant ornament. Here Raphael created a work of great and dignified simplicity by the use of entirely antique elements, yet exhibiting a certain boldness in general.¹¹⁸ His works indicate an advance in palace architecture.

Note 118. "Whoever is silent appears to consent." In the Work of Roschdorff on Tuscany (p. 9), the windows of the upper story are enclosed by "Roman" half columns, but on plate 57 these are correctly of the Ionic order. In another picture book dedicated to the Duke of Sachsen-Meiningen is stated on page 287: "On the windows are arranged alternately side gables (sic) and round-arched caps (sic) over columns, (sic), a motive imitated from the Pantheon altars." That is too much benefit, even for a careless reader!

On the beautiful three-story Palace Bartolini in Florence, likewise built about 1520 by Baccio d'Agnolo (died 1543), is expressed the same system. J. Burckhardt (Cicerone I, p. 317) says of this:-- "The angles are treated as pilasters with rustication, between the windows are recesses; above the windows are gables (as the earliest and therefore much derided example, soon imitated to excess), alternately round and angular, as if borrowed from the altars of the Pantheon; previously employed only on churches; the windows with particularly plain stone courses, the heavy and rude cornice also apparently by Baccio."

R. Redtenbacher adds, that according to Vasari on the Palace, which was much ridiculed by its contemporaries, was erected for the first time a canopied portal with entablature supported by columns, with pediment as well as a window in the pediment. He places the date of erection in the year 1520.

On this is said from another side (Dr. Josef, *Geschichte der Renaissance in Italien*, p. 299):-- "That it was ridiculed on account of its facade like a temple."

But now the Palace (Fig. 249) however has nothing to do with the temple facade, it also has at the angles no "pilasters with rustication," but simple ashlar quoins, its main cornice is neither dry, rude, nor too great, and it is also good antique with its projecting beam ends as such with volute consoles. Over the windows are neither "horizontal nor round caps," but pointed and segmental gables.

But a palace portal, crowned by a gable and flanked by half columns was already in 1464 on Palace di Venezia in Rome, and a similar one with gable ornament is found on Palace Vitelleschi in Corneto (1440) and S. Francesco in Rimini; also stone window crosses, which still play a part here until far into the Renaissance period; the main entablature has its model in a piece of the entablature of the Temple of Jupiter or of the Sun (commonly called the Frontispiece of Nero according to D Desgodetz) in the garden of the Colonnai in Rome. Why have the Florentines first learned to laugh at the building by Baccio? Then as now, if two do the like, it is not the same thing.

141. Palace Uguccioni.

Also Palace Uguccioni in Florence did not have to suffer under the mocking of the critical Florentines.

Mariotto di Zanobri Folsi, called L'Annogliato, first executed in Florence on Palace Uguccioni the pediment caps on coupled columns, according to his model completed in 1549. The facade is carefully executed in "hard stone", but lacks the stone main entablature, that on a model should be assumed to be a console cornice. Only the architrave was executed, above which stands now a ~~xx~~ strongly projecting wooden rafter cornice. Likewise is wanting the originally intended stone plinth and then the stone balustrade above the ground story, that is recessed in the same manner as on Palace Pandolfini. The window enclosures of the second and third stories are plain, the segmental and angular caps are supported by consoles, the half columns were supported on coupled pedestals. The splendid facade with three windows has a lower story constructed in bold rustication with round-arched openings, and which

3/1 is terminated by a wide belt. (See system of the facade in t
3/5 the great Work on Tuscany by von Stegmann and von Geymüller). Besides the Ionic capitals of the half columns, the sole ornament consists of a so-called running dog on the face of the belt, a bust over the middle arch of the ground story, and geometrical indications of arms on the fronts of the pedestals of the columns. The three windows in the upper story indeed likewise had slightly projecting stone balconies. Proportions and details are alike beautiful.

Yet simpler but also less important architecturally, Raphael's colleague Giulio Romano expresses himself in the one-story garden facade of his Palace del Te near Mantua. (Figs. 250, 251). It is of no importance, arid, and also has not become typical for Italian palace architecture.

What Bramante already recognized at the Cancellaria, the production of an imposing effect of a facade by the combining of two stories (two full stories or a full story and a half story) within a common vertical subdivision (pilasters or half columns) was also adopted by Raphael and by Giulio Romano, and was employed on the outer side of Palace del Te and on Villa Madama near Rome. Likewise Genga (died 1551) made a similar employment at Villa Imperiale in the vicinity of Pesaro (Fig. 328 in Section XIV, Villas). They created for the facades of palace buildings a further step, that expressed by the colossal order in the form of pilasters or half columns. With the same means as since, Baldassarro Peruzzi (died 1536), Antonio da Sangallo (died 1546), Pirro Ligorio, Baccio d'Agnolo, J. Dosio (died 1533) and B. Tasso (died 1547) worked at different places with varying fortune and skill on the problem of the treatment of palace facades, but particularly the Veronese San Micheli (died 1559).

All abandoned Bramante's refinement of details and sought a stronger expression, but remained faithful to the antique principle in the subdivision of facades. Where pilasters and columns did not seem serviceable to them for this, they took up flat or semicircular niches in the bearing wall piers, thus weakening these just where they should rather be stronger for technical reasons.

In place of the rhythmic bay, then appears on the piers the coupled pilasters set close together, half columns, or also

319 the arrangement in three steps, a middle pilaster with two others at the side, which then generally rise from a common pedestal and not from separate ones, as on the Cancellaria and on Palace Giraud at Rome. With the greatest expression and with good details worked the said highly gifted San Michele on his Palace Canossa (Fig. 252), Palace Bevilacqua (Fig. 254) and Palace Pompeii alla Victoria at Verona (Fig. 253). Likewise Palace Trissino in Vicenza (Fig. 255) is to be placed here.

141. Veronese Palaces.

In a grander manner has he developed the rhythmic bay further and splendidly treated it on Palace Bevilacqua. Like a triumphal arch, the three great windows of the upper story are enclosed by three-quarter columns, the arch spandrels are filled with figures, and narrow spaces between the great windows and the columns, which Bramante left for a quiet effect, are animated by small openings; one of the most beautiful and most original facades of the Italian Renaissance, that may worthily be placed beside the best, executed in all times. (Fig. 256).

With high stories the pilaster or columnar orders were well placed above each other; for low stories, they must have a belittling effect, contrary to their antique model. Men believed themselves to avoid the danger by recalling the pseudo-peripteral buildings of the ancients, and conceiving the facades again as an entirety, dropping the graduated stories, and allowing the building, like formerly the temple, to consist of the base, the columns and the entablature, inserting the masonry paneling with windows and belts between the great vertical supports. It is indeed no question, that a greater effect was thereby produced, but at the cost of the organic idea, which was entirely effaced by this. -- The earliest attempt in this sense Sangallo (the elder) must have made on Palace Nobile in Montepulciano, where he raised the Ionic pilasters on high pedestals, and inserted between them the great round-arched openings and the rectangular windows of the upper story (Fig. 244).

320 143. Palaces of Palladio.

In the most imposing manner this idea was perfected by Palladio in his buildings in Vicenza, on Palace Valmarano, repr-

represented in Figs. 257 and 258 (also example of a plan in Fig. 259 -- Palace Porto in Vicenza), and on the so-called Library of the Old Seminary. Unfortunately genuine materials were not always at the command of the master, so that he was compelled to construct many of his mighty colonnades of brick and allow them to be covered by stucco, which does not always carry out his bold desires.

321 The close of this epoch and likewise the beginning of that succeeding is formed by the buildings of Michelangelo. On these are more or less dependent the works of the masters employed from 1540 to 1580, Vignola (died 1573), Ligorio (died 1580), Vasari (died 1574), Ammanati (died 1592), Montorsoli (died 1563), Alessi (died 1573) and Palladio (died 1580).

322 144. Buildings of Vignola.

Concerning Vignola, Wölflin is of the opinion (p. 7), that in the general description he passes for the "perfected man of rules", since he wrote a manual of the five orders, in the foreground he stands as the representative of academic regularity. But this may be incorrect, if one examines the title page of his "Rules" and the court of Palace di Firenze at Rome! Should this perhaps decide the particular estimation of an artist, who built the Palace at Caprarola and Villa Giulia near Rome, who designed the plans for Palace Farnese in Piacenza (Fig. 260, from "Un primo Progetto del Vignola" for Palace Farnese at Piacenza etc., by H. von Geymüller, Bologna, 1908), and from Church Gesu (1563) and so many others in Rome? Letarouilly (Text, p. 660-661) further believes, that an inferior architect, while Vignola was then chiefly occupied at Caprarola, erroneously interpreted his sketches for the said Palace di Firenze in the execution, since besides much bad some good also occurs -- then what will the title page of a book say on such an occasion? The Vineyard di Papa Giulio Wölflin terms an "uncertain and groping building." Since when have buildings groped? When he further states, that it competed in the court of Palace di Firenze with Michelangelo's capricious treatment of forms, indeed with truth, I do not know what he saw. Barocco appears but a few, not all of the unimportant ornaments over the windows of the principal story -- and they are not once mean -- but nothing else. The portico of the garden facade with the loggia is very beautiful,

the mouldings throughout are fine and well reasoned, the court arcades indeed somewhat poor, but certainly not like Michelangelo. Palace Mattei Paganica with five axes at Rome, his House with three windows on Place Navona, Palace Narsi, his flight of ascending steps with the triply arched facade forms (1550-1555) near the Palace Conservators, his court architecture and facade treatment in Caprarola, with the colossal orders extending through two stories and the original entablature (Fig. 261, Palace Caprarola and Palace conservators), his internal architecture of the halls is so strong and beautiful in motives and so unsurpassed in details, with such a mighty effect, that one can only seek a genius and a scientifically trained architect behind such, yet not a worrying schoolmaster or one with the caprices of any other living little architect.

What then have the other tone-giving masters added? Variations on the preceding themes, but in principle nothing, at least nothing in the domain of palace architecture. From 1580 onward, the time of the commencing Barocco, the most influential architects were the pupils of Michelangelo:-- Giacomo della Porta, Dominicus and Giovanni Fontana, Borromini (died 1667), the three Lunghis (father, son and grandson), F. Ponzio, Fansaga, de Rossi, Pietro da Cortona, Bernini (died 1680), Guarini (died 1683), who was engaged in Messina and Turin, Father A. Pozzo, Bibiena Fuga, who was at his climax 315 about 1700, and finally may be named, but not last, Juvara (died 1735) and Vanvitelli (died 1773), most of whom were also employed on palace buildings.

The earliest of these masters in their works also again stand on the shoulders of their predecessors. They bring the works commenced earlier over into the new epoch, or the business is further cared for by the great and brought to an end, not always in harmony with the former.

316 The attempts to divert palace architecture into other paths goes back to Giulio Romano (1498-1546) and Antonio Giovane Sangallo (1482-1546). The latter was the one, who gave the impulse by Palace Farnese and his own House in Rome (Palace Sacchetti). He returned to the mode of composition of the creators of the Renaissance, spaces in Florence; plane wall surfaces, regular arrangement of the windows, similarity of their

forms in each story, retaining the mediaeval window sill belts with an accompanying band or story belt underneath, and termination of the structure by an antique console cornice, avoiding all grouping and all vertical subdivision of the masses or wall surfaces. The vertical rectangular windows retain the supremacy, which is sometimes interrupted by horizontal rectangular windows or those purely square in the half stories. New only and contrasting with the Florentine facades of the early time, is the accenting of the angles by vertical angle quoins, for the introduction of which Raphael (Palace Pandolfini, 1520), already provided, with Baccio d'Agnolo (Palace Bartolani in Florence, 1526). Ammanati (1511-1592) restricted himself on Palace Ruspoli in Rome to a single plain belt as a subdivision of the facade, indeed on account of its length with 19 axes.

145. Barocco Palaces.

If it follows that "the Barocco in palace architecture alone gives magnitude," this may well be, but its merit is not in view of the history of the evolution of palace architecture. A picturesque effect of the facades can scarcely be conceded in regard to Palaces Farnese, Ruspoli, Sacchetti, Este etc. (Figs. 262, 263; view and plan of Palace Farnese).

Palace Farnese became typical for the succeeding period and the Barocco style, and was commenced by Cardinal Farnese, elected Pope under the name of Paul III, and was carried forward so far in 1534 by Antonio da Sangallo, that the windows of the ground story and some halls next the court were completed.

327 With some changes, brought about by the change in the position of the owner, it was completed to the entablature. Until that time the work had been done according to the drawings of Sangallo, but now the Cardinal had become Pope, and he opened a competition for the treatment of the entablature of his Palace.

328 Such a hard stroke, indeed a stab in the heart of the artist, here fell on Sangallo, as formerly on the great Brunellesco, when as a reward and as a mark of confidence for the completed erection of the dome, a competition for the lantern was opened! But to poor Sangallo was previously reserved the liberty to be compelled to complete the structure according to the drawings of another!

In the competition participated Perin del Vaga, Fra Sebastiano del Piombo, Michelangelo and Vasari; Michelangelo was so decorous in this, as not to hand in his design like the others, but sent it by Vasari, excusing himself on account of ill-

ness.

The Pope praised all, but gave preference to the work of Michelangelo, and he affronted the aged Sangallo by placing a certain Melighino, an obsequious creature, who scarcely had any conception of a drawing, and did not properly understand his own business as superintendent at S. Peter's, on the same plane as the other competitors and by honoring him accordingly.

This occurred about the time of 1544-1545, shortly before the death of Sangallo (1546), who ever yet retained the hope, that the Pope would change his opinion, and would leave the completion to him according to his own designs, wherefore he delayed the execution of the entablature. But he received the definite command to proceed according to the decision of the Pope, and therefore completed a wooden model at the full size (11.2 ft.), which was placed on the building. The Pope and all Rome visited this; agreement was general, whereupon Michelangelo was entrusted with the execution.

After the death of Sangallo, there still remained for the later artists the completion of the second story in the court and the construction of the entire third story, the extending of the rear facade from half the height of the ground story, and the entire middle portion from the pavement, as well as the execution of the entire internal decoration.

Paul III desired to transfer the continuing of his palace to Michelangelo, but the latter excused himself on account of the great amount of his business and his age of 71 years, and also that he understood too little of architecture. Vignola then appears to have undertaken from 1547 onward to carry on the construction without important assistance, and without the oversight of the aged master; therefore should he participate in the fame for the treatment of the very wonderful entablature by his details. After the death of Michelangelo (1564), it certainly remained to him alone, and 16 years after the death of Vignola, Giacomo della Porta erected the third story, as confirmed by an inscription (1589). He also completed the rear facade about this time.

More than a half century had this work been carried on, and it was as a unity, to which a kind of great talent like Michelangelo, devoted 15 years of his life, but who must suffer that a person, even when artist or man of letters, should contend for the place, but was spared to see, what the latter had no-

at some point by some and others!

After the dying out of the main line, the Palace came as a ruin in 1781, and later it became the property of the King of Naples. In 1874 it was rented to the French government, which arranged there its Embassy and its archaeological Institute. The artists on the building partly came from the Göttingen and from the Theatre of Mannheim. Michelangelo once indicated to arrange a second court next the first, and to connect this with the courtyard by a bridge.

Very beautiful and a model for all later Roman palaces were the three-aisled colonnade hall of the vestibule, the second convenient main stairway, and the long gallery in the second story, that the architect with their single effort to the beginning of the 15th century by magnificent frescoes of Michelangelo.

Before the Palace and on the Piazza are yet to be mentioned the two fountains by Vignola which were built in 1546. A of polished grey granite and from the fountains of Constantinople. And what will always stand on the main facade next the entrance are the dignity and massiveness of the architecture. I was, with the grand proportions of the whole, the architect a and the taste in detail. It has served as a model for many; none of these has ever surpassed, which took it as a model!

On the front facade alone in the masonry appear in the door-er parts, which must have arisen from defects in construction, of it again in a window occur, these things must be attributed to the loss of the skill of the constructor. Raphael, then as Michelangelo and his pupils, who perhaps omitted to connect the walls of the front facade with the court facade by ties, or by the layers of beams. The facade masonry is built of well shaped bricks, which remain without spaces in the masonry.

146. Palace of the Popes a landmark in the history of architecture.

33/ More than a half century had this work been carried on, planned as a unity, to which a man of great talent like Sangallo, devoted 16 years of his life, but who must suffer that others, even though artists of high gifts, should contend for the place, but who was spared to see, what the latter had made of his designs, in which they replaced unity and harmony in some parts by capric and discord!

After the dying out of the male line, the Palace came to Parma in 1781, and later it became the property of the King of Naples; in 1874 it was rented to the French government, which arranged there its Embassy and its Archaeological Institute. The ashlar on the building partly came from the Colosseum and from the Theatre of Marcellus. Michelangelo once intended to arrange a second court next the Tiber, and to connect this with the Farnesina by a bridge.

332 Ever beautiful and a model for all later Roman palaces remain the three-aisled columnar hall of the vestibule, the first convenient main stairway, and the long gallery in the second story, that the carracci with their pupils adorned at the beginning of the 17th century by magnificent frescos of mythological character.

Before the Palace and on the Place are yet to be mentioned the two fountains by Vignola with the basins 18.6 ft. long, of polished gray granite and from the Baths of Caracalla. And what will always charm us on the main facade next the Place are the dignity and massiveness of the architectural masses, with the grand proportions of the whole, the strength and the taste in details! It has served as a model for many; none of these has ever surpassed, which took it as a model!

On the front facade slips in the masonry appear in the upper parts, which must have arisen from defects in construction, or if faults in execution occur, then these must be attributed indeed less to the skilled constructor Sangallo, than to Michelangelo and his pupils, who perhaps omitted to connect the walls of the front facade with the court facade by ties, or by the layers of beams. The facade masonry is built of well shaped bricks, which remain without stucco in the upper stories.

146. Palace Farnese a Landmark in the History of Architecture.

Like Palaces Pitti, Strozzi, Rucellai and the Cancellaria, so remains Palace Farnese a landmark in the history of Italian palaces of the later phase of the Renaissance.

147. Palace Sacchetti.

Here may also be mentioned another work of the younger Antonio da Sangallo, Palace Sacchetti, probably built as his own residence. "Before all buildings of that time perhaps the one, that with great dimensions and a certain luxury has the least eccentricity." After the death of the master, purchased by Cardinal Giovanni Pucci di Montepulciano, he had the building completed and enlarged by Nanni Bigio. Only later it came into the possession of the Sacchetti. Executed in brick-work left visible, but which should be stuccoed, only the belts, entablature, entrance doorway and the window enclosures were made of travertine. Doorway and windows have horizontal lintels; the ground story is high and furnished with great windows; in the upper story a story for living is combined with a mezzanine into a whole, and above this again is a high story, terminating with a console cornice like the antique, that is somewhat too small for the height of the building.

It is assumed that Giacomo della Porta was one of the most influential masters of this epoch, which indeed must be true. Then it may also be taken as true, that he impressed a decidedly Barocco stamp on many palace facades, which he restored or built, as for example, those of Palace Serlupi and of Villa Aldobrandini near Frascati. Wölflin goes so far in his estimation, that he would designate as his highest work, if it could be proved to be by him, that he not only had charge of the erection of the great dome of S. Peter, but likewise the drawing (model ?) could be referred to him. I also should hold Diogenes as greater, if he had won the battle of Alexander, but I ask that one may get out of my sunshine.

But the lumpy facades of the Barocco alone do not entirely determine the style, while the vertically subdivided ones appear everywhere, particularly in the very last phase of the style, where the colossal order presents the preferred means of decoration for facades.

334 148. Palaces on the Capitol at Rome.

If the buildings on the Capitol at Rome (Fig. 26) can be referred to the plans of Michelangelo ((facade of the princi-

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principal structure by G. Rainaldi (1592), the Palace on the left hand likewise by Rainaldi (1644-1655), that on the right hand by Boccapaduli and T. de Cavalieri (1564-1568), the bell tower by M. Lunghi (1579)), then the colossal order on the palace facade, which was previously executed as a weaker experiment on the Cancellaria of Bramante and on Villa Madama, also on Palace del Te of Giulio Romano (Fig. 264), belongs to the characteristics of palace architecture at about the middle of the 16th century, and which about the end of the same was preferably employed by A. Palladio.

"Arcades of Palace Conservators," mentioned by Wölflin (p. 30), do not exist. Arcades are excluded.

The subdivision of the architectural masses in the great or the little style is not a matter of the early, but rather only of the later or High Barocco, as it was employed by Guarini (1624-1685) in Turin, taken into consideration by his excesses on S. Gregorio in Messina, but which he again restrained somewhat on his facade of Palace Carignano at Turin. (See plan and facade as well as the conventionalized details of G. Guarini in Figs. 165, 266).

Lines of the horizontal belts and cornices curved inward and outward, ogee pediments, and round arches curved outward, appear at the windows, the ornament recedes, the architectural members on the contrary are heaped and overloaded. But if it be said:-- "That with enjoyment in the power of the material (sic) (Palaces Sacchetti and Ruspoli) a tendency toward the formless came into architecture" at the beginning of the last new phase, so now toward its end, where the detail forms make themselves independent of the organism, there appear the "feverish fantasies of architecture" in their place. It may be correct, that the technics never create a style, but they influence it and the possibility of its execution in general. The Barocco is nothing essentially new, that cannot be derived from the preceding style, there was a Barocco in the antique and in the middle ages, it could not be first invented during the expiring Renaissance. The roots of every Barocco style, even of the Italian, lie in the past. "Every style develops itself and continues."

The Barocco style may say with Egmont, how it will make us believe:-- "I promised you once to come as Spaniard," in it

may be of a stiff and heavy nature in combination with an assured pose, instead of the diversity of the individual may be recognized a general and uniform tone, which may all be distinctive of the aristocratic palaces, as all free expressions were reserved to the interior of the house. Preceding times likewise already provided for this without Spanish grandeur. To approach more closely such suppositions, I hold to be just as purposeless as the investigations on the system of proportions for complete structures, which enter upon the facades of Grecian temples or the interior of a mediaeval cathedral. It is also entirely incorrect and even not to be proved, that the entire mystery of the organic in art rests thereon, that this works like nature, always repeating in the details the image of the whole. Neither nature nor art is so tedious. With the fewest deductions in this sense moreover, are the foundations accurately determined; they are capricious or inexact, eccentric in observation, and in architecture are frequently entirely wrecked on the varying accuracy in execution and the unreliability of the measurements. It recalls but too frequently the attempt in the intellectual purpose to find the lost or existing unit of scale from the different monuments. One may indeed in general theorize, but no law for artistic creation, at most for the control of conceptions and for comparison with others. (Also see J. Durm's brief notes on the theory of proportions in Heselborn, Handbuch der architektonische Konstruktionen. Vol. 99. Leipzig. 1908. p. 110).

The roof determines the character of the structure; to erect it is the last task of the superintendent, to give it the proper form and proportion to the substructure is the function of the architect. All forms, flat and steep, plane or curved, were in use in all times. The Italian house, palace and church roofs employed all known forms. They first considered the flat antique temple roof covered by tiles. For high buildings and narrow streets, it was scarcely or not at all visible, frequently being concealed behind an attic, that crowned or terminated the building. The architect therefore did not have to take it into account esthetically. He did not need to worry his head about it, as today in the German empire, whether he should make a roof twice or thrice as high as his monumental massive structure. Likewise he did not have

to consider any ornamental forms of the roof. A German or French form of the roof, for example, as it was constructed on the chateaus of this country at the same time or in the like style, could not charm the Italian architects. And yet it did not now remain without consideration. On Castle del Valentino at Turin and on the Palace at Stupinigi occurred the mansard roof. Therefore these were also under French influences and in Piedmont. (See Sections IX and XXa, Roofs and Castles).

The principles for the Tuscan palaces, whose history of the development and their transmission to other regions, may extend still further over some separate types, as they have developed in the other different parts of the country of the peninsula, but first follows the Venetian type.

149. The Venetian Palace Type.

The regular symmetrical arrangement of the windows, the uniform development of the facade surfaces, where all is represented into a single plane, where no belt and no main cornice varies from the straight and unbroken line, are abandoned in the Venetian type, giving place to a more animated form by a more or less accenting of certain structural parts, whereby to the Renaissance at first falls the problem, to translate the arrangement of plan already become typical in the middle ages, and the treatment of the facade resulting therefrom, from the Gothic form of expression into that of the Renaissance. The skeleton with its elements remains, but its exterior changes. Compare in this sense the two simple palaces, the mediaeval Gothic Palace Cavalli (Fig. 222) and Palace Grimani (Fig. 267) of the Renaissance. The triply divided facade separates into a central and two side parts, symmetrical with it, each with two windows separated by a broad pier. All portions are crowned by a common horizontal rather dry cornice, with a flat roof lying behind it. The middle portion contains at the ground level the "water portal", on the right and left being a moderately large grated window, above this being a continuous balcony not strongly projecting from the plane of the facade with a loggia divided into three or 336 five parts. The three parts are separated by vertical bands (pilasters) from each other. But we find this separation on Palace Corner-Spinelli again omitted; the triple division of

the round-arched double windows being placed between into a middle part with continuous balcony, on the right and left of the same being placed at equal distances only a single round-arched double window of the same form. The three thus forming a part and divided, the proportion between them becomes as three to one, and a round, arch as usual, also in form of the windows with balconies on each side.

The water garden on the lower palace of the river side gives a view to the right across the river, where the second story is used as a terrace, not to the advantage of the proportions of the building, since the architectural is required to have too great an effect in comparison to the two principal stories. (See palace corner della Ca' Grande).

150. Palace Resonance.

The water garden is the ground story on Palace Resonance of the corner of a terrace beside the water garden. When the proportions of columns and horizontal entablature is as a truly grand effect, and in spite of the great windows of the second story, it is not excited by them. The two upper stories are divided by two-story columns into nearly equal parts, only the angles being somewhat more strongly by double columns. The original character of the ground story is expressed in unobtrusively not reached by the water garden in proportion to the windows to be excited, but was and only a moderate regular elevation with overtones of light, ornament and slight recessions. The high balconies of the architectural entablature is in comparison not exactly the same addition.

The magnificent facade of Longwood (1850) for Palace Resonance in Venice is a view in the architectural between the two main towers, a low front and left of the water garden and a balcony and wall garden, which in their total height are harmonized with the two towers in a masterly way. On the elevation of the small windows is distinctive.

Beautifully is the water garden

the facade is solely produced by the arrangement of the windows. The water portal with the grated windows remains in the ground story, in the second and third stories the two Florentine round-arched double windows being coupled together into a middle part with continuous balcony, on the right and left of the same being placed at equal distances only a single round-arched double window of the same form. The facade thus remains so quiet and dignified, the proportion between light openings and masses arranged like a model, such as never again found on the extremely rich palaces on Canal Grande.

The water portal at the later palaces of the richer style gives place to the triple arched hall, where to the ground story is added a mezzanine, not to the advantage of the good proportions of the building, since the substructure is developed to have too high an effect in comparison to the two principal stories. (See palace corner della Ca' Grande).

150. Palace Rezzonico.

More happy is the ground story on Palace Rezzonico by the omission of a mezzanine beside the water portal. With its rusticated columns and horizontal entablature it has a truly grand effect, and in spite of the greater richness of the upper story, it is not excelled by that. The two upper stories are divided by three-quarter columns into entirely regular bays, only the angles being emphasized more strongly by double columns. What the original arrangement of the ground story expresses is unfortunately not retained by the upper story; it presents a grouping of the windows to be expected, but we find only a Florentine regular subdivision with overrich details, ornament and figure decorations. The high frieze of the principal entablature is in conclusion not exactly the best addition.

151. Palace Pesaro.

The magnificent facade of Longhena (1650) for Palace Pesaro in Venice is a mean in the substructure between the two previously named, while right and left of the water portal are arranged two half stories, which in their total height are harmonized with the two upper stories in a masterly way. Only the combination of the small windows is disturbing.

Beautifully is the water portal treated with the two great arched openings and the semicircular niche between them; like-

likewise the diamond ashlar of the wall surfaces give the ground story the character of inaccessibility and defiance. In the upper stories by the alternation of single and coupled columns is attempted a triple division, but which is not clearly enough expressed. The round-arched windows between them with the too heavy keystones, and the strongly relieved cupids in the spandrels of the arches, the doubling of the little columns in the window jambs give to the architecture something unquiet, and in spite of the too great richness it lacks even the majestic repose and strength, that is so powerfully expressed in the ground story (Fig. 268). Good for the effect of the whole is the circumstance, that the frieze of the main entablature has no openings of any kind, but solid and strongly projecting relief ornament. Without hesitation, we must designate the Palace as one of the most magnificent works of the 17th century in this branch in Italy.

152. Palace Vendramin.

More quiet and refined stands opposite it the older Palace Vendramin Calergi, built (1481) by Pietro Lombardi, recalling Palace Corner-Spinelli in the shape of the windows. The ground story, in my opinion, is more correctly and monumentally conceived and executed. At the triple arched water portal unfortunately the side arches are fitted with the same windows as in the upper story, whereby were formed three double windows in a middle part and two side parts with one double window each; coupled pairs of columns separate them from each other. Everything here shows the most finely arranged regularity! Beautifully arranged are the little windows in the mezzanine of the ground story, good in form, dimensions and projection for the whole is the main entablature.

153. Palace Manzoni.

Worthy of particular mention must be Palace Manzoni in Venice from the time of the Lombardi (1500); only a few years older than the Calergi, retaining the Gothic basis and built in the most refined forms of the Renaissance, with perhaps some too slender proportions of the round-arched windows. The high frieze extending beneath the windows of the middle story, adorned by candelabras, festoons and eagles, as high as the parapet of the balcony, the finely distributed inlays of square slabs and round pieces of variously colored marbles, the

the fine window enclosures, the pilasters with strong and perhaps too large capitals, the fivefold arcade of the middle part, and the elegant main entablature make it one of the most refined creations on the Grand Canal.

The prominent master is still shown by Palace Grimani, built by Sanmicheli, with its subdivision by pilasters and columns, extended through all three stories, with the flight of steps before the entire middle portion and the rusticated plinth, which rises from the water as if conscious of its purpose. The rhythm in the succession of the windows in the upper stories -- three great arched windows alternating with two rectangular ones, separated from each other by three-quarter columns -- recalls what the same master attained on Palace Bevilacqua in such a splendid manner. What is there accomplished in excessive richness of forms, must here yield to a more severe and colder manner.

154. Facade of the Library of S. Marco.

Sansovino utilized without many changes in his noble marble facade of the Library of S. Marco the ground idea of the Roman theatre facade, but with the highest development of the figure and ornamental decoration. (See Fig. 269, partial elevation; Fig. 270, angle solution).

The not excessive development in height of the Venetian palaces, their interesting grouping of the windows, the noble and light building material in its perfected technical treatment, the rising of the structures from the quiet surface of the water, nowhere an unwise economy, the refined details often made overrich by ornaments and figures, lighted by a shining sun and backed by a deep blue sky, the buildings here and there interrupted by a little garden with fresh green, brilliant flowers and golden fruits -- all these together allow to prevail around the charming palaces of the city of lagoons the highest and most ensnaring impressions of the fancy, supported by recollections of great events in the history of the world, that occurred on this ground, of a famous part of the republic with the sad final consideration of the transitoriness of everything earthly. "The stones speak;" the stones make known the fame of the ancient art of Venice to all men born later. Where the tongues of mortals are silent, the architecture speaks the words of eternity !

"In the compact architecture of Genoa, the proportions of facades are generally neglected, and any pleasing decoration of the latter is everywhere omitted." ¹²¹ I cannot subscribe to this principle, in view of the palaces in Via Nova and other streets or on public Places; most are rather subdivided on the facades according to entirely definite and clearly expressed ground principles, resulting from originality in the arrangement of the ground plan, that developed naturally from the local conditions, mostly compelled by the land rising in terraces from the surface of the sea to the tops of the hills, and the location of the streets, one stepped back of the other. The tendency contained in all recalls the Venetian type. We saw there the water portal placed on the middle axis of the building with two side windows, and in Genoa we find a vestibule as a middle part, that lies directly on the street at the ground level, but slightly raised above the sidewalk, and that here "has become one of the highest problems," and appears in connection with the stairway as a further element of beauty. A continuous flight of steps joins the vestibule with the court at a higher level and the stairway, producing effects of lighting and picturesque views toward the interior of the dwelling, such as rarely occur again, are seldom realized, but nowhere surpassed. (Fig. 163; section through such an arrangement on the University building; Fig. 271, perspective; Fig. 272, flight of steps; Fig. 177, plan of Palace Durazzo.

Note 121. See Burckhardt, *3. Geschichte der Renaissance in Italien*. 2nd edition. Stuttgart. 1878. p. 200.

Characteristic is further the triple division of the facades, the subdivision into two side wings and a middle portion of entirely equal width, which is peculiar to the great and the little Palace Brignoli (Durazzo-Brignoli with the animated hermes-caryatids supporting the balcony, the University, Palace Durazzo and others).

But as good as the best Tuscan palaces is Palace Doria-Tursi (now Municipio) with nine axes, designed with its added side porticos, and likewise Palace Durazzo in its simply grand forms and side porticos in the upper story. Outlines and proportions of the architectural parts to each other are here so well and earnestly weighed as anywhere.

156. Palace Lercari.

Charming must have been Palace Lercari in its original form with an arcade loggia in the upper story, where indeed nothing can be said of any neglect of proportions, to satisfy which more attention must be paid here than on the plain facades of mediaeval cities.

For the palaces of families is normal the two story arrangement, where over each large story is arranged a mezzanine, and where above the main entablature is generally constructed a balustrade or an attic.

Thus the division of the facade into three equal parts, with a but slightly projecting middle portion, location of the entrance portal on the middle axis of the building, arrangement of a half story over each of the great stories of living rooms, animation of the facade surfaces by pilasters, ornamentation of these by stucco and painting -- these briefly stated, are the peculiarities of Genoese palace facades, in which always beautiful and rich entrance portals were constructed, which frequently form the only expensive decoration of the facade.

It is frequently believed, that all money remaining to an owner for the decoration of his residence, he spent for an artistic portal, a handsome little court and a beautiful stairway; this is particularly true of the high palaces for rental in the complex narrow alleys of Genoa, where moreover all ornamentation on the higher part became folly, which indeed owner and architect knew how to judge correctly. These portals say to us:-- local conditions compel the omission of an artistic elevation on the exterior; but we will show, that under other conditions, we should also have done differently. Appreciation, means and artists, we had for this; but sound human intelligence forbade us to treat it otherwise than we have done. In these parts of the city the omission of the considered proportions on the facades is certainly self-evident.

157. Palace Doria-Tursi.

The grandest representative of the Genoese palace style must be the previously mentioned Palace Doria-Tursi (now Municipio), with nine axes, two stories with two mezzanines, built of white marble, gray and reddish shell limestone in 1564 by Rocco Lugaro for Niccolo Grimaldi, Prince of Salerno. It pas-

passed into the possession of Doria in 1593, then came into the hands of the King and later into those of the Jesuits, whereby under such changing ownership the interior suffered many transformations, particularly one of the stairway, and not always to its advantage.

The main entrance portal is especially distinguished by columns, figures and a shield of arms. Above a high lower story, as on all palaces of Genoa, required by the low position of the entire vestibule and the elevated location of the court, rise the two upper stories, each of which is externally combined with the corresponding mezzanine into one. Pilasters of the Doric order or rusticated ashlar divide the second and third stories; only there the shafts of the columns are decorated by flutes instead of rustication -- thus also the graduation of the expression of the elements, i.e., their more ornamental treatment upwards. The triply arched side porticos are 27.9 ft. high and over 9.8 ft. wide with terraces, and give the building the stamp of a princely palace.

158. Palace Durazzo-Pallavicini.

The existing Palace Durazzo-Pallavicini is just as massive and great, with its simple architecture and its stuccoed facade surfaces, plain belts 3.3 ft. in height and triple arched loggias in the upper story, and is a work of Bartolommeo Bianco (1656). It was rebuilt in the interior by Tagliafico, to whom we owe the singularly beautiful and grand stairway with self-supporting marble steps 8.7 ft. long, as well also as the arrangement of connecting steps between vestibule and court with the prefixed arcade and the figures before the middle columns (Figs. 177, 271). The stairway is covered by a coffered tunnel vault, both its front walls being opened and fitted with semicircular glass windows, through which the interior is filled with quiet light. The front wall beneath one entrance for light is treated by an Ionic colonnade, which opens into a flat niche with a wonderfully beautiful architectural design.

A technical note may be permitted. The two open loggias are constructed without visible ties for the vaults, so that they show two continuous parallel cracks on the right and left of the crown, and the columns are also inclined outwards.

159. Palace University Regia.

The existing Palace University Regia was originally erected in 1623 from the plans of Bartolomeo Bianco as a Jesuit College, and only in 1782 was it transferred to its present purpose. This Jesuit structure (like the Brera in Milan, which was built by the same Society for the same purpose), exceeds in the grandeur of the design of the court all other palaces of Genoa. The side porticos of the court are extended beside the vestibule to the facade wall, so that this is enlarged by porticos on three sides, at its middle a single flight of 23 steps forming the passage from the vestibule to the floor of the porticos. The balustrades of this stairway are not carried down to the first step; they end on the eighth step in pedestals with spheres laid thereon, adjoined by mighty marble lions watching the entrance. By these artistic sculptures the monotony of the sameness of the steps is relieved in the best manner. The court measures 42.6 * 75.5 ft., at its end opens the main stairway, and it is enclosed by coupled arcades, which support architrave, frieze and cornice, that rest on the undivided orders in the antique way.

The view from the high vestibule toward the porticos 24.6 ft. high with the forest of white marble columns and the beautiful stairway in the background produce the greatest charm. Everything breathes freedom, air, light and sunshine; the breast expands more fully in this temple of knowledge than in the again fashionable, low and monastic porticos of modern buildings for the same purpose. (For example, Marburg). As grandly beautiful as the interior, just as unfortunate is the weak and meanly treated exterior.

In reference to the construction of the building it is to be stated, that also here the porticos in the court are all constructed without visible ties; the columns stand 4 to 6 ins. out of plumb and inclined toward the court, which Reinhardt ¹²² formerly stated in the words:-- "The execution of the entire structure is careless and inaccurate, and the columns of the court are in great part inclined toward the court by the thrust of the vaults." The masonry is built of split stones, the vaults are of bricks, the great ceilings of the halls are constructed of wood in the form of vaults and plastered; the columns with the entablature resting on them, like

the balustrades, are of white marble, and the belts are covered by slates. Rainwater is conducted from the floors of the porticos to the court through small slits in the wall lined with tin (Fig. 163).

Note 122. Reinhardt, p. 3).

160. Palace Balbi.

Palace Balbi (Fig. 178; plan) must be mentioned on account of the peculiarity of its stairway. -- The construction of this staircase formed a difficult problem by the later arranged Via Nuovissima, which was solved by Gregoric Retondi in a spirited manner. The original building had its main entrance from the lower lying Via Lomellina, and after the opening of the street, it must be transferred to the new street while retaining existing arrangements, thus producing two entrance stairways, which had as a result the bridging over the little court by a stairway flight, in order to be able to reach the upper story from both streets.

161. Palaces with Painted Facades and Stucco Decorations.

As examples of painted facades are to be named:-- Palace S Spinola with frescos and rich painted enclosures of the simple stone window frames, with horizontal figures on the pediment caps of the windows; then Palace Franzone in Albano with a painted sham architecture of double pilasters with figures before them.

Of palaces with stucco decorations are to be mentioned Palace Reggio with hermes caryatids in the ground story and Palace degli Imperiale. ¹²³

Note 123. A collection of Genoese palaces, villas public buildings and churches is to be found in these works:--

Palazzi antichi di Genova, collected and drawn by Peter Paul Rubens. Antwerp. 1652.

Gauthier, M. P. Les plus beaux Edifices de la Ville de Gènes et ses Environs. Paris. 1830.

Reinhardt, R. Palast Architektur von Ober-Italien und Toscana from 15 th to 17 th centuries. Genoa. Berlin. 1886.

Not to be forgotten are the numerous small private houses with graceful portals in the style of the Lombard Renaissance, with their charming little courts and stairways.

162. Milanese Types.

"Milan has an abundance of splendid structures, yet no sep-

separate type of palaces;" the Roman type with and without the use of the colossal order is the one most prevalent. Nothing more exists of the old palaces of the Early Renaissance. The Medici Bank of Filarete has disappeared; Palace Marliani was tory down in 1782.¹²⁴ A few private houses of that time are still preserved.¹²⁵

Note 124. A view of it after an old engraving may be found in Müntz, E. *La Renaissance en Italie et en France*. Paris. 1885. p. 239. Pointed windows in that style between Corinthian pilasters on Hospital Maggiore in Milan.

Note 125. The interesting project for a palace from Filarete's time in Milan, a three story structure surrounded by water, with a great middle part and two angle pavilions, which have triple arched loggias, indeed remained a mere project. A drawing of this may be found in Müntz, E. *Histoire de l'Art pendant la Renaissance. I. Italie. Les Primitifs*. Paris. 1889. p. 485.

And yet here again are found motives, that do not reappear elsewhere, and indeed were produced on milanese soil; these are hermes and half figures-- caryatids instead of pilasters or three-quarter columns.

163. Palace Lioni.

The Omenoni, i.e., giants on the house of the sculptor Lioni, an exhibition of eight bearded figures with bowed heads and folded arms, as high as the lower story of the palace, are forms that we will seek in vain in other cities. Six of the giants submissively bear the fate to which they are doomed; the two on the right and left of the portal support with their backs the projecting balcony. The upper part consists of the living story and a mezzanine, externally combined into one story, that is subdivided by engaged Ionic half columns, corresponding to the giants in the ground story. Between the columns are arranged semicircular niches for figure decorations. Of interesting form is also the boldly projecting main entablature with the attic (Fig. 273).

Hermes-caryatids for subdividing the surface of a story (heads with a stele diminishing downward) we find on Palace Marino built by Galeazzo Alessi in 1555, now Municipio, on which the heads on the main facade are forced between the consoles of the main entablature. They are not less than 21.3

ft. high and are coupled in pairs at the angles of the pavilions. Less expressive are those that we find on the piers of the upper story in the charmingly decorated courts (Figs. 274, 275), where the small heads have volute abacuses, on which rest the architrave. (Also see Palace of Justice in Mantua Fig. 276). The principal facade next Place S. Fedele is built in three stories; the ground story contains high living rooms with a mezzanine above, like the second story, so that the wall surfaces are subdivided below by Doric supports and above by Ionic, while the uppermost story receives its vertical subdivision by the great hermes-pilasters extending to the main cornice. The latter is boldly treated, designed with regard to the entire height of the structure and covered by an attic. Also the facade next Place della Scala has recently been constructed in three stories. One side of the state court lies on the street, but does not open on it, or only through the entrance doorway.

349 The combination of the larger living apartments with the low rooms of the mezzanine into one story externally was transferred from Genoa, where this arrangement is typical. How favorite were these hermes-pilasters may be deduced from the circumstance, that they were used without reflection on the middle window of Church della Beata Vergine near S. Celso in Milan.

Hermes-like pilasters with Ionic capitals, so much loved by the Genoese Renaissance, we find used for subdividing the facade on Palace di Giureconsulti built by Seregni (1564), which with its clock tower adjoins the North side of Place de' Mercanti (Fig. 277).

165. Palace del Tribunale.

The Palace del Tribunale was built in 1605, and shows the ordinary Roman type, and likewise Palace Erba-Odescalchi built by Pellegrini, with broken pediments and inserted busts over the windows of the third story.

166. Palace Annoni.

Palace Annoni, built by F. Ricchini in 1631, combines the principal story with the mezzanine, but is otherwise designed after the Roman type.

167. Palace Reale.

The existing Palace Reale was erected instead of the old P

palace of the ruler, covers on the Cathedral Place an area 6686.0 ft. long and averaging 394 ft. deep, and it has a masterly combined ground plan with the principal court and 8 side courts, vestibules, stairways, driveways, stables, halls, living apartments and palace chapel, in which is included the half Romanesque Church S. Gottardo, with the interesting brick tower erected by Pecovari (1336). From 1335 onward was erected this residence Palace by Azzone Visconti until Napoleon I. In the year 1573 the building was first ruined by the Spanish Governor Guzman Ponce de Leon, who desired to have it refitted according to the taste of his time, for which he had all the richly ornamented Gothic broken out. In 1717 the Imperial Governor built further alter the design of G. Barbieri from Parma. Later the Empress Maria Theresa called Vanvitelli for a rebuilding. But the great architect desired to clear it away entirely and build anew, which was rejected, and the decision was for a restoration with the utilization of the old walls. Vanvitelli declined this and recommended for the work his pupil Gaspare Piermarini di Foligno. Afterwards it experienced another change by the interference of Napoleon I, who entrusted the execution of his ideas to cavalier Luigi Canonica.

The principal facade is after the Roman type with a colossal order extending through two stories, the lower being erected as an ashlar structure, the great hall, the main stairway with the vestibule being the work of Piermarini, while the rear facade was designed by Canonica and executed by Tazzini. Thus the works continued until the close of the first third of the last century (19 th).

168. Palace Belgioso (Villa Reale).

The school of Vanvitelli also exhibits Palace Belgioso (Villa Reale), built in 1790 by L. Pollack, which is characterized by a handsome but strongly academical ground plan. The octagonal form of the driveway has its model in the Palace at Caserta. (Fig. 278).

Palace della Societa detta del Giardino was built at the end of the 16 th century after the Roman type either by Pellegrini or by Sregni. Remarkable is its plan with two courts, one of which is constructed as a pier court, the other as a columnar court. (Three-quarter columns). 127

Note 127. A large number of public buildings and palaces is contained in *gatina, F. Le Fabbriche diu cospicue di Milano. Milan. 1844.*

350 169. Examples of Palaces in Ferrara.

"The most beautiful buildings of the Dukes of the House of Este have disappeared; the Castle is a picturesque and imposing view without its like, but cannot pass for a palace." -- The private palaces of the nobility in Ferrara, as generally in the cities of the lesser princes, are never so important as those in the former capitals of the republics. The suspicious rule as well as the financial oppression of the House of Este in the 15 th and 16 th centuries permitted no great architectural display of power to occur. 128

Note 128. See Burckhardt, J. *Der gicerane etc. Basle. 1860.* p. 212.

170. Palace de' Diamanti.

Palace de' Diamanti, begun for Sigismondo of Este (1493), belongs to the most important of Ferrara. It now serves for museum purposes. Its peculiar marble ashlar-work with pointed pyramids (nailheads) on the face of each stone gives the building a singular and unquiet appearance by the similarity of treatment of the stones (similar forms on Veronese and Venetian palaces), which are set with fine joints, the cutting at the joints being as close as if rubbed, like the surfaces themselves. A similar treatment of the wall piers between the windows with the same unquiet effect is also found on Palace Bevilacqua at Bologna, and then in Verona, Venice and Vicenza on some palaces.

The ceilings in the interior are remarkable, frequently very beautiful and characteristic, but partly robbed of their figure ornamentation. The great hall with five windows still possesses a coffered ceiling left in the natural color of the 357 wood, the corner hall beside it having one with paintings in bright colors and rich gilding, the "seventh hall" with a ceiling divided into octagonal and lozenge panels, that are chiefly painted in green and gold, while the succeeding one is kept in white, green and gold.

Also Palace Schifa-noja yet adds a very beautiful coffered ceiling in blue and gold with a high wall frieze.

By an extremely graceful facade Palace Roverella is distin-

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distinguished, and which exhibits one of the few great bay windows over its marble portal, that we possess from the time of the Italian Renaissance.

171. Palace Schifa-noja.

The architecturally unimportant Palace Schifa-noja was built by Duke Borso in 1490 and exhibits a good portal with shield of arms above it.

342 172. Palace Scrofa.

Beyond a magnificent court, "that replaces ten palaces", is placed Palace Scrofa.-- The most beautiful arabesques at a stately portal with a balcony surrounded by cupids has Palace dei Leoni. -- Palaces Bevilacqua and Zatti have facades with open porticos (street porticos).

To the 16th and 17th centuries belong Palaces Bentivoglio and Costabili, and Palace Crispo, the best from this time with a rather strong classicism, and entirely covered by proverbs, designed by Girolamo da Carpi.

As the last building of the Este may yet be mentioned La P Palazzina, a charming garden house (Palazzina di Marfisa d'Este). 129

Note 129. Good illustrations of the palaces of Ferrara are in Series I a, *Italia Artistica*. Ferrara e Pompeii. No. 2 by Giuseppe Agnelli. Bergamo. 1906. Also contains good illustrations of architectural details.

Padua was degraded in 1405 to a Venetian rural city, which makes itself apparent in its private buildings; its palaces are therefore of little importance.

173. Palace Types of Padua and Vicenza.

In Vicenza predominate the palaces with a colossal order by A. Palladio. The buildings of the city from the time of the Early Renaissance permit the recognition of a well developed architectural feeling. Among the palaces of Palladio should especially be mentioned the Palace-Villa Chiericato (Fig. 279, facade and plan) on account of its open portico covered by a architraves in the lower and upper stories. Stuccoed and now coated with a yellow wash, it unfortunately loses much of its effect. For an arrangement of the plan compare Palace del Conte Giuseppe di Porto in Vicenza (Fig. 259), and as examples of a colossal order may serve Palace Valmarona in Vicenza, (Fig. 257), Palace Porto (Fig. 258), with the Maison Garree

IXA. Reliquary Palace Type.

The palaces of the early Renaissance, that have been still
known over the first century of the 16th century, show
in one of the most important signs of Italy. Generally ap-
pear two almost general characteristics, which make them a
typical or a Venetian development of the palace structure;
errors and the use of the lower story for service purposes.
The last feature is very essential to itself and also dis-
tinct in summer and winter, but it has even prevented the occur-
rence of that strong and closed feeling; there is a certain
very horizontal outlines, on which the proportion of height
to height was not as all considered, no middle is determined,
and for example, the doorway is comparatively small. It is
also here no rule without exceptions and not everywhere a
one purpose.

Note 100. See Burckhardt: p. 207.

IXB. Palace del Palazzo.

Palace del Palazzo was built in the year 1564-1565 by Fran-
cesco Rossi at Orsini, and has a facade with three stories in the
middle, which is well considered in the proportion. The
ground story is the same as above, but there have been
several columns set before them, broken entablatures, and a
small diamond window above with gold railing.
The middle story is similar to the middle. A complete and
it is certainly created in this detached structure; the dis-
tinctly expressed termination with the classical narrative and
in place of a simple facade the proportion of a possibility
of any further extension of the building, which would be al-
lowed by the course of the facade. The contrast
was then it, intended to leave into account the given space.
The second upper story has been round-arched windows;
and well suited to the classical entablature, including the
here, that have a finely decorated architrave. The high top
and lying above this is looking and is now finished by a
heavy arch projecting beyond. In attempt to make a
the cornice entirely in stone has been made in the
middle corner.

The story mentioned is constructed of bricks with flat dis-
cursive work, or finished by the name of the architect. The

(Temple of Augustus) in Nîmes as a model (Fig. 239).

174. Bolognese Palace Type.

"For palaces of the Early Renaissance, that here must still extend over the first decades of the 16th century, Bologna is one of the most important cities of Italy. Certainly appear two almost general restrictions, which make impossible a Florentine or a Venetian development of the palace structure; bricks and the use of the lower story for street porticos. The last custom is very beautiful in itself and alike pleasant in summer and winter, but it has even prevented the occurrence of that strong and closed design; there originated merely horizontal buildings, on which the proportion of length to height was not at all considered, no middle is designated, and for example, the doorway is capriciously placed." ¹³⁰ Yet also here no rule is without exceptions and not everywhere a are porticos.

Note 130. See Burckhardt: p. 207.

175. Palace del Podesta.

Palace del Podesta was built in the years 1692-1694 by Francesco Fossi di Dozza, and has a facade with nine axes in two stories, which is well considered in the proportions. The ground story indeed has arcades on piers, but these have Corinthian columns set before them, broken entablatures, deep arched jambs, small diamond paneled ashlar with bold ashlar projections of similar form at the angles. A complete entirety is certainly created in this detached structure; its distinctly expressed terminations with the aforesaid massive angle piers of ashlar exclude the supposition of a possibility of any further extension of the building, which would be already forbidden by the course of the streets. The architect was thus instructed to take into account the given space.

35-6 The receding upper story has great round-arched windows; the wall surfaces exhibit slender Corinthian enclosing pilasters, that bear a finely membered architrave. The high frieze lying above this is lacking and is now replaced by plain masonry with projecting rafters. An attempt to again rebuild the cornice entirely in stone has recently been made at the right corner.

The story mentioned is constructed of bricks with flat decorative work, as required by the nature of the materials. But

But just this boldly subdivided stone substructure with the motive of the projecting columns and broken entablatures, in connection with the fine brick architecture of the upper story and the high main cornice with the little round windows enclosed in the frieze, give to the Palace something definitely characteristic, never found again in Tuscany, Venice, nor in Rome.

But it should not be then forgotten, that originally and by the first architects this kind of facade was not intended. The projecting columns were first added in the 16th century and recall the allied arrangements on Palace del Comune in Brescia. According to the design of 1492 piers with adjacent columns¹³¹ and a continuous frieze were intended, which were spoiled by the rebuilding of the arcades. The main cornice was never constructed, but must have not decidedly differed from the other Bolognese palaces of that time. The projecting half columns were adorned by iron holders with rings after the Tuscan style, some of which we represent in Fig. 280, that are now preserved in Museum Civico.

Note 131. "Soretto" of combined pilaster and column in Valeri-Mologuzzi. p. 110.

176. Palace Bevilacqua.

Palace Bevilacqua¹³² (built 1482) lacks the arcades on the street and the use of bricks on the front facade. After the Florentine type, along the street front extends a plinth bench, only interrupted by the two entrance portals, one of which is enriched by pilasters, entablature and semicircular tympanum.

Note 132. See the elegant publication of Alfonsy Rubbiani. *Il Palazzo Bevilacqua in Bologna.* (Milan. Alfieri & Lacroix. 1908). Estratto della *Rassegna d'Arte*. No. 7. Luglio. 1908) with very instructive and beautiful photographic views of the interior and exterior. The happy restoration of the Palace we owe to A. Rubbiani.

The ground story is divided in two halves by a window sill belt, and thereby the horizontalism is more accented, than it was indeed imperatively necessary, but thereby on the other hand the upper story has so much greater effect. The ground story windows are rectangular and furnished with caps; the windows of the upper story rise above a belt with decorated

conspicuous and the most important of the features
and the entire structure at the crown and to be mentioned.
After another corner style the building terminates with the
projective, decorated front and a large console column,
faded with regard to the entire nature of the structure, and
which turned out too severe, like that of Palace Museum in
France. The wall surfaces are covered by the so-called
brown paneled surface, and are slightly graduated in expres-
sion like those on buildings in France and Germany (Paris and
Germany). The fine surface between the windows of the upper
story and the main facade presents a finished effect, which
is an entirely changed scene as at Palace Museum and Berlin
Museum in France. The little balcony appeared over the
room panel with a special iron railing is not the highest,
but it is an interesting addition (Paris, Berlin). The facade is a
very fine and beautiful one, which is the first impression
of the building.

Of great beauty, however, in its symmetry, perfectly in
balance in its form (Paris, Berlin), and in its construction of
(especially the columns). Now finished, it is a beautiful
and very interesting in color. For example, the facade above
the entrance was painted in gray or gray green, although
the facade was yellow and black, as seen by the removal of the
iron-work in some places. However, the present metalwork
refers to the facade and the facade is a very fine scene.
and colored accessories. A certain addition is also the
the facade is a very fine scene; on a small square base with
volute capital sits a small water-spouting lion (or bear?).
which forms the center of water into a hollowed Corinthian
capital, which is the ground. However, beautiful may be the
impression of the facade, which is a very fine scene.
with a fountain.

In the center of the facade, which is a very fine scene,
the late or present facade, seen on a small square
All arches and walls have white tiles.

frieze and architrave, keeping a mean in respect to form between the Tuscan and Venetian double windows of that time. As characteristic additions the great acroterias at the impostes and the middle acroterias at the crown are to be mentioned. After antique Roman style the building terminates with the architrave, decorated frieze and a heavy console cornice, designed with regard to the entire height of the structure, but which turned out too severe, like that of Palace Riccardi in Florence. The wall surfaces are covered by the so-called diamond paneled ashlar, that are slightly graduated in expression like those on buildings in Verona and Ferrara (Casa de' Diamanti). The high surface between the windows of the upper story and the main entablature has a dignified effect, which is as finely observed here as at Palace Strozzi and Palace Rucellai in Florence. The little balcony inserted over the rich portal with a graceful iron railing is not the happiest, but yet an interesting addition (Fig. 281). The facade is designed according to the principles of the first Florentine Renaissance architects.

Of great beauty, wonderful in its symmetry, perfected in details is the court (Fig. 282), entirely constructed of bricks (excepting the columns). Now lime-washed, it originally shone in the full colors of the materials, which were yet enhanced by paintings in colors. For example, the frieze above the arcades was painted in gray on gray upon grounds alternately reddish-yellow and black, as shown by the removal of the lime-wash in some places. Likewise the precious medallions of frieze of red terra cotta must indeed have had gold frames and colored accessories. A charming addition is also the little running fountain in the court; on a high square pier with volute capital sits a small water-spouting lion (or bear?), which pours the stream of water into a hollowed Corinthian capital standing on the ground. However beautiful may be the piece, it must yet be said, that it is a skilful modern combination of old fragments, which originally had nothing to do with a fountain.

As a peculiarity is still to be stated, that the archivolts in the court do not rest directly on the capitals, but after the Late or Eastern Roman fashion, stand on an inserted block. All arches and vaults have visible ties.

177. Palace dei Garraci.

From the second half of the 15 th century (completed 1570) dates the Palace (Casa) formerly Bero, "called Garraci", which should indeed be included in the number of palaces, but it also shows no arcades next the street. The building is entirely of brick from the sidewalk to the main entablature, and exhibits to us the Bolognese palace type unchanged; a plain, continuous high plinth ends with a round; above it projects from the wall masonry corbels of brick without any ornamentation, connected by semicircular tunnel vaults, and exhibit richly decorated archivolts. (See Section V, Fig. 80); in the plane of the latter rises the wall of the facade with a window sill belt, on which stand the semicircular Tuscan windows with their characteristic enclosing pilasters and broad ornamented archivolts with acroterias at imposts and crown. The motive, but without translating the acroterias into stone, V. Vittorio likewise employed in the interior of his Umilta in Pistoja. The upper story is terminated by an architrave, a high frieze with round openings and adorned by paintings, succeeded by a moderately projecting brick console cornice. A brick structure, heavy on the whole, but fine in details, and carried out without fear of full color.

178. Palace Fantuzzi.

Again without arcade next the street is Palace Fantuzzi, built in the time of 1517-1521 with two stories and eleven window axes, the windows rectangular in the first story and with angular caps in the second, ending with a doubled console cornice. A complete design of not bad proportions, but with an unfortunate squaring of the ashlar masonry and of the three-quarter columns animating this.

179. Palace Fioseri.

A perfected composition in the form of an "arcaded palace" of definite length is shown by Palace Fioseri, built by Formigione in 1518, which in its arcaded story resembles the arrangement of Palace del Podesta and of the Municipio in Brescia, with the projecting three-quarter columns of the Corinthian order on high pedestals with high arcades. The upper story is likewise animated by three-quarter columns, and is terminated by a massive antique cornice, consisting of architrave, frieze and console cornice, above which rises a strongly rec-

receding attic story. The windows in the upper story are rectangular and covered by segmental caps, the filling surfaces constructed of red bricks left visible. Over the middle one of the five arches of the arcade is inserted a scarcely organic balcony, since the belt course of the ground story directly intersects the side of the balcony balustrade, and the balcony slab lies lower than that raising the lower story by the stilted arcade, and gives the palace something imposing, that may partly result from the circumstance, that the round arches between the columns are not repeated in the upper story.

180. Palace Bischi.

Palace Bischi was built by Agostino Bischi in 1545, and again shows a complete mass of the building without street arcades with severe rustication on the plinth, the portal columns after the style of Ammanati in the court of Palace Pitti, and rusticated enclosures of the rectangular windows of the ground story, which again are placed very high, after the Bolognese custom.

181. Palace Albergati.

Palace Albergati was commenced in 1520 by Battista di Pietro da Como, but again taken up only in 1584 and completed in 1612, and has the character of Palace Farnese in Rome. Bold ashlar quoins strengthen its angles; on a continuous, very high and plain brick plinth rise two stories, separated from each other by bold belts (architrave, triglyph frieze and belt), arranged at the height of the window sills, which terminate with a Roman console cornice with small square windows in the frieze. The details have a classical flavor; the great wall surfaces are constructed of bricks, and indeed originally were covered by stucco.

182. Palace della Zecca.

Palace della Zecca (Mint), originally built in 1580 by Scipione Dattari, is again a composition not injured by a street arcade. The windows are enclosed by rusticated ashlar in a 257all stories, the angles strengthened by ashlar, and the facade surfaces are stuccoed; as a palace with five windows it remains a rather severe and dry work.

183. Palace del Tribunale.

Likewise a palace structure without arcades is Palace del Tribunale, formerly Ruini di Palladio (1572) with two side

wings built in 1584. The middle portion, over a story with colossal order, bears an antique pediment with arms and figures.

These examples may show that palace architecture in Bologna did not move entirely within such narrow limits as might appear at the first glance.

184. Palace Ghislieri.

Also the palace built in the year 1490 by the Ghislieri family, and which afterwards passed into the possession of the Malvasia, now the well known Hotel Brun-Frank, may be mentioned as a grand example of a Bolognese palace of brick without arcades (Fig. 283). It is composed with 8 axes, exhibits a closed substructure with a great vaulted entrance vestibule, over this being a half story with square windows, that is terminated by a window sill belt. On this rises the principal story with rich double windows, that is crowned by a bold main cornice proportioned to the height of the palace. In the frieze are arranged small round openings corresponding to the window axes (Fig. 283). The angles of the main facade exhibit on the ground story angle quoins made of sandstone, for example such as occur on Palace Guadagni in Florence. But they are not extended as high as there, rather merely reaching the height of the window sills of the mezzanine story, and they also have no sort of continuation to the upper stories. (Fig. 284). They were uncovered at the recently executed restoration (1912) of the building (the architect of the renovation is the engineer Giorgio Cavazza); Fig. 285 affords information concerning their appearance at that time. In the frieze is placed diagonally an inscription in two lines, bearing the date of 1400 in addition to the words, "Justice, Truth and Evidence." The date of erection of the palace is thereby assured.

The structure was enclosed by scaffolding in the autumn of 1912 and could be examined accurately. By the foreman entrusted with the restoration, the brick masonry was first cleaned and freshly painted wherever necessary, but otherwise the outer surfaces of the bricks were left as they were found. Then they were passed over two or three times with a great wet sponge, that had been dipped in a mixture of the natural color, milk and water. The tone had about the natural color

of the bricks (red); light spots were treated again, so that a uniform color of the surfaces was produced. On the contrary, the ornaments were coated by a brush with a mixture of iron, milk and water, of a somewhat darker color than the plain bricks. Belts, window enclosures and cornice thus received a dark but still fiery red. On decorated fragments of the window bricks, one could easily see that these moulded bricks had been coated first with limewash scarcely 1/100 in. thick, on which was again applied the red wash very thinly, so that the ornaments have lost nothing of their sharpness.

On a house with three windows beside the Palace in Via Gombruti, on a facade perforated by windows with pointed arches above the richly decorated belt with consoles and shells, the protecting cap is constructed of projecting triangular bricks with tiles laid thereon; thus here is found a combination of ordinary and of artistic brick construction.

185. Normal Bolognese Palace.

In the state archives is preserved the drawing of a Bolognese Renaissance Palace, reproduced by Malaguzzi-Valeri.¹⁸³ It is a two story "arcaded palace" with 10 axes, opening at one corner to the street, closed at the other. The ground story shows arcades resting on columns with horizontal belts above, on which rest round-arched windows without little columns, but which have the wide enclosures and the three characteristic acroterias, the window wings being divided into small rectangles by sash-bars; the walls extend high above the windows of the upper story and terminate with a continuous belt, over which are found semicircular windows opening under compartments in a half-round cavetto cornice. A tile roof of moderate height with four chimneys and pointed caps completes the building, whose angles are protected by ashlar.

Note 183. Malaguzzi-Valeri. p. 153.

This scheme is generally correct; but I have not seen in Bologna this kind of cornice counted as that most common, which for example, occurs with the aid of painting on the gateway buildings of the Certosa near Pavia, on the Cathedral in Lugano and at other places in Upper Italy. (Fig. 110).

I regard as normal those cornices, that are constructed above the upper story in the form of an architrave, a high frieze beset by small windows and a console cornice, like those

to be seen on Palace del Podesta, Palace Pallavicini (1497-1528), Palace dei Carracci (15 th century) Palace Salina-Amorini- Bolognini (1525), Palace Ghislardi (now Fava), built in 1488 by Montarini, and on Palace Zucchini, built in the 16 th century by Terrabilia. All these are "Unlimited facades", that could be extended as far as desired.

360 186. Palace Fava and other Palaces in Bologna.

But among these palaces with porticos, praise should not be withheld from Palace Fava, that it is one of the most beautifully treated brick facades with well graduated stories, and possesses an interesting court. The massive portico, resting on a plinth perforated by cellar windows, the original piers thereof with pilasters and columns, the not too slender proportions, the plain, earnest and broad wall surfaces with the beautifully detailed and characteristic double windows, over these being the low half story with the little semicircular windows, and the effective crowning main cornice of Corinthian type -- all these are accents, which by their combined effect permanently ensure its high importance to the building. The massive ornamental consoles, that bear the walls of the upper story, are likewise interesting additions, although the ornaments thereon lack antelegant flow of lines, and in their details recall those of the late Roman imperial period.

Thus the normal palace of the Renaissance in Bologna must appear as a combination of that given in the old drawing with the cornice last mentioned. The continuous series of arches in the lower story remains, above this being the half round windows with the three acroterias and with or without the little dividing columns and tympanums ornamented by medallions, above being the cornice with circular, rectangular, (square and rectangular) or semicircular windows.

As a highly interesting example of the early time, that cannot be regarded as entirely normal, must be Palace Isolani, (1454), built by Pagno da Fiesole. The portico is covered by a semicircular vault, the arches rest on columns; over the window sill belt rise richly decorated pointed windows enclosed by pilasters, above which is the terminating architrave and a cornice with arched frieze on consoles.

Further Palace Malaguti, built about 1496, which shows in the ground story enclosing pilasters with segmental arches

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between them and starting from the sidewalk, together with wall panels, no longer original. The upper story is animated by pilasters corresponding to the lower ones; above is the architrave, the frieze with round windows, then the roof cornice with battlements, but richer and more imposing than those of Palace Venezia in Rome. Noteworthy is also the balcony with a covered superstructure.

Instead of arches on columns or piers, but constructed with horizontal architraves resting on columns for the porticos of the ground story, like those inspired by Palladio, are shown by Palace Sanguinetti, formerly Lambertini, built by Bartolomeo Triachini (1545-1581). ¹³⁴

Note 134. For the architectural history of this Palace and of other architectural monuments in Bologna, see Molaguzzi-Voleri, F. *L'Architettura a Bologna nel Rinascimento*. Rocca S. Casciano. 18899.

As free supports of porticos in Bologna, rectangular and octagonal piers occur, the piers with three-quarter columns and the pilasters with half columns attached to two sides, interesting examples of which are given by the arched passages and porticos of Palaces Fava and Ghisleri (Fig. 200 b).

187. Palace Types from Naples.

Giuliano da Majano created the best in Naples, the summer Palace Poggio Reale, known to us only by the drawings of Serlio and a ground plan in the collection of drawings in the Uffizi at Florence.

367 With him also the Neapolitan Andrea Ciccone also took up the new architectural style, and before the end of the 15th century we see another master's work in the same, Gabriele d'Agnolo; to these may yet be added Gianfrancesco Mormandi.

Of palaces of the Early time are to be mentioned:-- Palace Colobrano (1466) after the Florentine type; Palace Gravina, prized for its beautiful arrangement, with massive rustication in the ground story, plain walls and Corinthian pilasters in the upper story. (Burckhardt represents this Palace as menaced by rebuilding in 1860. Likewise Palace della Rocca by Mormandi is to be named, with massive and great entrance doorway as the most prominent motive on the building, and further the elegant Palace Alice of the same time.

362 From the late time of the Renaissance should also be menti-

the investigation of the case in Rome.

The investigation is being conducted in Rome, and the results will be reported to the Commission in Rome.

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mentioned Palace Reale, built by Domenico Fontana; otherwise the Neapolitan palace facades all stand very much lower than similar buildings of the same time in Rome.

The Early Renaissance is less prominent in palace architecture; so much the more does the Barocco style play a part, and as for its facades, "the good on them is not new, and the new is not good."

188. Roman Types of the Late Time.

With the previously mentioned types of Roman palaces (Cancellaria, Palace Farnese) were also named the buildings on the Capitol in Rome, their designer and the constructing architects.

Burckhardt believes, that as they are, they do not represent any original idea, that rather in the lack of anything better, they have gradually come into existence under the diminishing utilization of Michelangelo's designs. This master at least (1538) himself laid out the ramps so essential for the general effect of the whole; to him likewise belongs the architecture of Palace Senator with the great flight of steps on two sides, "which with the fountain and the two river gods forms a truly united entirety of sculpture and of architecture." The colossal order on the facade next the Peace above a high ashlar story, the bold crowning cornice with the attic adorned by figures, in combination with stairway design, make the palace one of the most prominent works of its kind.

The two Palaces Conservators, peculiarly conceived and harmonized in the right proportions with Palace Senator, arranged to diverge from the ascending steps, detailed in the taste of their time, were certainly erected after Buonarrotti's plans, even if only very much later. Likewise their positions, oblique to Palace Senator, must be based on his plans. (See Section XXI; Public Places in the City). As at S. Peter, the porticos separate more widely toward the rear, inversely as for the theatre. Optical reasons appear to have concurred here just as little as on Place S. Peter (see Section XXI) or near Scala Regia (Fig. 164); the adjoining buildings, their location and extent here as there gave the impulse!

363 Interesting remains the employment of the colossal order in combination with the entablature of the second story resting on columns, and the rectangular windows with rich enclosures

of three-quarter columns, arched caps, and ornamented by shells. The pilasters standing on pedestals project strongly and are accompanied by plain vertical bands, that are connected again by a head band beneath the great architrave. The avoidance of an arcade in the lower story, and the insertion of the architrave on columns like Ionic between the great pilasters, gives to the facade something peculiarly novel. Main cornice and attic are constructed to correspond in height and projection to the colossal order, and thus are harmonized with regard to the entire height of the building. As technically noteworthy is to be mentioned, that the architraves resting on the Ionic columns have frequently cracked, both on account of unequal pressures and unfavorably distributed loads (Fig. 261).

Note 135. Palazzo Borghese (Fig. 288). The extended axis of the doorway in the left wing of the building was laid out by Ponzio. It was for the purpose of opening a splendid perspective view through the long series of beautiful rooms, and to heighten the effect of the social rooms. It terminates with a view of the hill and a fountain, which is incorporated in the entrance gateway of the adjacent house.

The facades exhibit mighty masses, but little valuable architecture. Of the court columns, 8 are of red and 40 of grey granite in the first story. In all, 100 columns come into use in the two stories. The later arcades open to the garden are closed by iron gratings. (Also see Letarouilly. Text. p. 378.

364 Particularly on account of their arrangement, of plan on an irregular site, the two united Palaces of Pietro and Angelo Massimi are to be named, located on a formerly narrow and curved street, which has been changed into a broad one by the so-called Hausmannization of the city of Rome, whereby the former effect of the palace has suffered greatly, especially in regard to its grandeur and the effect of the details.

365 The original structure (1455) contained a printing office; it was destroyed in the capture of Rome by the Constable de Bourbon, and later rebuilt according to the plans of Baldassarre Peruzzi (1532), who died almost in poverty in 1536. He had learned in Siena also to utilize small dimensions, and in the house plans for the two brothers, he has done most astonishing things in the complete utilization of the building site, without violating the laws of beauty and propriety. Not

easily elsewhere might be solved such a difficult problem with so much skill, nor also at the time of the rule of any other style period; for only the Renaissance was able to lend to an architectural programme of this kind the corresponding expression.

The Palace of Pietro has an entrance portico adorned by columns; that of Angelo remained more simple. Built of travertine in the lower story, the more common material was employed in the upper stories, bricks covered with plaster and stucco, and but two columns of the loggia in the court are of marble. Elegance and refined feeling, which prevail in the details and all parts of the building, may excuse the lack in monumentality of the ornamentation, and it is to be strongly credited to Peruzzi, that while conscious of the impermanence of his materials, yet he avoided no expenditure of time and knowledge in order to give his best work.

Particularly is it the loggia, which confirms us in this feeling; its ceiling is entirely constructed of oak, painted white and furnished with attached golden ornaments, while the floor covering is executed in red and white clay tiles. On a plinth of but few steps in height on the ground story rises the colonnade, on the right and left of this being pilasters with similar cornices above and without any breaks. Over this was built the high story with rectangular windows, with broken balustrades and pediments with consoles thereon; then follow two mezzanine stories with horizontal rectangular windows and the crowning console cornice. No other belts divide the height of the facade, and the facade surfaces in general are only animated by uniform rectangular ashlar. 136

Note 136. Leterouilly devotes 19 plates to this Palace alone (Pls. 280 - 298) of his great work, with regard to the beautiful details of the architectural work, and the diversity of the views resulting from the interesting solution of the plan.

Palace Angelo Massimi is kept entirely plain on its exterior, and only the court with its arcades in the ground story, and its horizontally covered loggia in the upper story, afford any architectural interest.

In this place may also be mentioned Palace Maccarani, built by Giulio Romano, and Palace Vidoni by Raphael.

THE HISTORY OF THE CITY OF BOSTON

Some of the persons who were killed in the fire were of the name of the person who was killed in the fire. The fire was caused by a candle which was left burning in a room. The fire spread very rapidly and the firemen were unable to contain it. The fire destroyed many of the buildings in the city and the people who lived in the buildings were forced to leave their homes. The fire was a great disaster for the city and the people who lived in the buildings. The fire was caused by a candle which was left burning in a room. The fire spread very rapidly and the firemen were unable to contain it. The fire destroyed many of the buildings in the city and the people who lived in the buildings were forced to leave their homes. The fire was a great disaster for the city and the people who lived in the buildings.

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189. Barocco Palaces in Rome.

Most of the Barocco palaces were built as great shelters of the high nobility and of its upper and lower servants. They seek their entire pride in grand and repeated stairways, in state courts with rich perspectives and views of the gardens.

Palace Barberini and Palace Borghese in Rome take into account these requirements, in the former the grand two-story vestibule with the exedra, in which two great stairways with various side stairs provide access to the upper stories. The adjacent gardens are of vast extent, well subdivided, and animated by fountains. The snow piece therein is formed by the great fountain with the colossal statue of Apollo and a magnificent stone pine as background, a view that four decades since, every young artist traveling to Rome drew (Fig. 287), but which has now vanished in that form. ¹³⁷

Note 137. About 1624, shortly after the accession of Urban VIII to the pontificate, Cardinal Chamberlain Francesco Barberini, nephew of the Pope, commenced the building, that was completed in 1630. Carlo Maderno, Francesco Borromini and Luigi Bernini had charge of the works. The elder, Maderno, indeed prepared the first plans, but scarcely busied himself with the construction. For this was left to the two rivals, Borromini and Bernini. The former was a pupil and relative of Maderno; but the Pope favored the latter, who at first desired to allow the two to work together, but he soon saw, that he had thereby made a decision to his injury. Therefore

Therefore in consequence he assigned to each his separate activity, Borromini receiving the vestibule, the ramp and the rear facade; the main facade with the projecting structures and the side facades, thus the greater half was assigned to Bernini. For the construction of the two main stairways, the oval stairway was given to Borromini and to Bernini the larger straight stairway.

The patronage enjoyed by Bernini together with his results, contributed with the blame to Borromini's tragic end; later he took his life by the thrust of a dagger. Envy of artists and a too acute sense of honor bear no good fruits in all times!

Palace Borghese, popularly called the "harpsichord of the Borghese" from its peculiar outline form, was begun (1590) by

at the corner of the street and the house of the architect. The house is a two-story building with a gabled roof. The facade is made of brick and has a central entrance with a small porch. The house is surrounded by a garden with trees and shrubs. The architect's office is located on the second floor of the house. The office has a large window that looks out onto the garden. The architect's name is John Doe. He is a well-known architect in the city. He has designed many famous buildings. The house is a good example of his work. It is a beautiful building that is well-maintained. The garden is also very nice. It has many different plants and flowers. The house is a great place to live. It is comfortable and has everything you need. The architect's office is a great place to work. It is a quiet and peaceful place. The architect is a very talented person. He is always coming up with new ideas. The house is a masterpiece of architecture. It is a true work of art. The garden is also a masterpiece. It is a beautiful and peaceful place. The house and garden are a great example of the architect's talent. They are a true masterpiece of architecture and landscaping.

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the Spanish Cardinal Dezza after the designs of the Elder Martino Lunghi, then purchased by Cardinal Borghese, who ascended the papal throne as Paul V, and at whose command Flaminio Ponzio extended the structure to the Ripetta (Fig. 288, plan).

By him was also the peculiar arrangement of the doors through 10 rooms, that in spite of the broken facade, made possible a perspective of the richest kind, ending with a view of a mill and a fountain attached to a neighboring house beyond the street. The great and beautiful court with double columns, and the view toward the garden, planned by Carlo Rainaldi and adorned by three eccentric wall fountains, will ever remain an architectural view of grand effect (Fig. 289).

190. Sicilian Palaces.

Of palaces in the chief cities of Sicily are to be mentioned particularly; in Messina, Palace Averna, in Palermo, Palaces dei Monte, de Cuto, Comistino, Cattolica and Gerace. They almost entirely belong to the later phase of the Renaissance, their facades scarcely present anything new, and the plans show the enclosed court with and without porticos with piers or columns. ¹³⁸

Note 138. See Wittorf, J. J. & Zandt, L. *Architecture Moderne de la Sicile*. Paris. 1835.

191. Final Considerations; Academic Requirements and Facades with vertical projections.

Likewise the academic requirements for palace facades, we still have to take into consideration, on account of their originator, Serlio. In his Book IV he gives us facade systems in the Doric, Ionic and Corinthian orders (Figs. 290, 291), and in addition thereto a palace facade with angle projections and steep hip roofs, with and without lanterns (Fig. 292), which present much, that is attractive and worth consideration. We close our examinations with a reference to a species of palace facades, that belong to the Late Renaissance period, the time when men would, but no longer could.

On Lunghi's Palace Dezza (1590) plain vertical wall projections were conceived for the facade toward Via Fontanella. This is also given place by C. Gurlitt in his *Geschichte des Barockstiles* (History of Barocco Style) in Italy. (1887, p. 1196), and was also already stated very much earlier by Dr. H. Hübsch in Carlsruhe. These projections were likewise mentio-

mentioned in the first edition of the Italian Renaissance by J. Borm (1903).

C. Gurlitt names this banded architecture, the enclosure of the windows being by slightly projecting bands instead of pilasters and architraves, "one of the most tasteless and unfortunate motives, that is suitable only for small dimensions." But it appears to have come into honor again in Germany, and with it as a "high novelty" is formed a school with an appeal to the service and stable buildings of the higher classes of the next to the last century (18th). (See Fig. 293, Palace Borghese, Rome, and court of Palace della Pilota at Parma.

SECTION XIV. VILLAS.

Country and Pleasure Houses, Tuscan Villas, the Roman and those near Rome, Villas near Naples, Venetian and the Villas of Palladio; Genoese Villas, Villa Designs of Serlio, Designs of Gardens of Serlio and of Alberti, Hunting Villas, Landscape Surroundings, Garden Ornamentation, Flowers, Pergolas, Fountains, etc.

"While every other possession causes toil and danger, fear and repentance, the Villa yields great and honorable enjoyment; the Villa remains there ever true and friendly; dwell in it at the right time and with love, then will it not only satisfy you, but it will add return to returns. In the spring, it makes you joyful by the green of the trees and the songs of the birds; in autumn it yields for you fruit a hundred fold for slight labor, no melancholy can enter it during the entire year. It is the gathering place of good and honorable men; nothing secret or false occurs there; all see everything; there no judge and witnesses are required; for all are peaceable and good to each other. Hasten thither to flee from the pride of the rich and the infamy of the bad! Blessed life in the Villa, unknown good fortune!"

(From Alberti's *Trattato del Governo della Famiglia*. (Treatise on the government of a family)).

192. Country House and Pleasure House.

Just as in palace architecture, Florence also in villa architecture preceded the rest of Italy. There first awakened again the love of the cultured for rural life -- an inheritance from antique times -- already before the middle of the 14th century, when in the North the nobles still dwelt in their hill castles, the prominent orders of monks in enclosed monasteries, and the rich citizens in the cities for the entire year.

"Around Florence lie many villas in the crystal clear air, in the smiling landscape with glorious outlook; there is little fog and no injurious wind. All is good, also the pure and healthy water, and of the numberless buildings, many are to be seen like palaces of princes, many like villas, magnificent and costly."

370 Two kinds of country houses are distinguished, both of which

served for longer residence, which were merely residences, and others, mostly one story and simply constructed, which furnished their owners a maintenance, and indeed also a certain profit by the sale of agricultural produce. -- To these was added a third sort the pleasure house or "suburban villa," located before the city or in the suburbs, serving for transient or very brief occupancy. It must make a cheerful and inviting impression, for which essential value was placed on the artistic form, and the location on a slope was preferred. The extravagant and capricious passed for permissible for this kind of dwellings; many things might occur in the country, that would not be allowed in a "civil or noble dwelling." 139

Note 139. Our modern architecture is less scrupulous in this.

Villas with external porticos were regarded as more beautiful than those with closed facades, and as a relic of castle architecture was preferably added a tower design. Symmetry was therefore dropped, "wherein however the Renaissance never counted the unsymmetrical as a picturesque element, and only gave as much of this, as was unavoidable." And now much better is it here to proceed from the natural conditions than from the modern endeavor for a picturesque effect at any price, at the cost of sense and intelligence, as well as of the logical development of a plan and of sound construction? Much of what surprises us today on old buildings as "picturesque" originated as additions, and was nowise in the purpose of the first architect; the ancients then made a virtue of necessity, and we create for ourselves without virtue or necessity!

Greater importance was given the problem by a two story construction of the building, requiring a large stairway; the servants were then placed in the basement story and the supplies in a "concealed upper story with dormer windows."

193. Arrangement of the Country House.

For the country house the agricultural side could be entirely omitted, if it served for a permanent residence of the nobleman or citizen become a landlord, and he lacked a city possession; but it could also be chiefly arranged for the manager with the condition, that some few rooms would be ready for the owner at any visit, and these then received better furni-

furniture and a preferable location. But for very limited conditions these country houses served only the managing farmer or the peasant in the form of plain, yet generally picturesquely effective groups of structures. ~~As a peculiar nature~~ of the site, particular requirements for the location of separate structural parts, definite heights thereof, the arrangement of light openings, doorways and gates, just as the area demanded, etc., naturally produced here a certain diversity in the exteriors.

According to the nature of the ground and climatic conditions of a rural region, these villas, vineyards or tenements bear their special stamp; they are differently treated on the slopes of the Alps than in the valleys of the Arno or Tiber, or on the Gulf of Naples.

Evidence of this is given by the country House near Bellinzona and a tenement before Gate Angelica near Rome. There is still the high German tile roof over a massive stone structure in several stories, here the flat roof with open portico, tower and two story structure (Fig. 294, 295).

The small House not far from the entrance inside Villa Borghese at Rome (Fig. 296) must indeed be counted here, as also some small drawings of such little villas by the Swiss architect J. Stadler, made known by J. Burckhardt in his *Geschichte der Renaissance in Italien*. (Stuttgart. 1878, p. 277, 278). J. Raschendorff in his folio volume on Palaces in Tuscany published a "Villa Careggi," likewise to be reckoned here, whose title and description seem to me to be disputable.

372 In the same work on "Palast Architektur von Ober Italien u und Toscana vom 15. tn - 17. tn Jahrhundert" by J. C. Raschendorff (Berlin, 1888) is represented on Plate 61 a "Villa Careggi" with the subscription; "architect unknown." It is a picturesque and very trim structure 90.5 x 43.7 ft. in area, which contains 4 rooms and an open loggia for the ground story. On page 18 is given a text for this Pl. 61, which evidently does not fit the illustration, but does the little Villa Careggi built by master Lorenzo. Then in Raschendorff in a reference to H. von Reumont there stands, "the Villa has vertical battlements and on the internal square court" -- but nothing of all this is to be seen on Pl. 61. Also in the text the unknown architect of the Pl. is changed to the well known Mich-

Michelozzo. I determine this from a correct study. The building of Lorenzo suffered somewhat from the well known earthquake several years since; but it was again restored by the present owner, Segre, who appreciates his treasure and cares for it, preserves the wonderful garden design in the most beautiful manner, and even seeks to extend its area. The loggia and the death chamber of Cosimo the Elder and of Lorenzo the Magnificent are piously preserved. Garden and villa are now closed, but the art-loving possessor readily affords to the introduced technician a view of his sanctuaries, doubly sacred on account of the great historical reminiscences, the grandeur and beauty of the garden and of the landscape, that can be seen from along the Arno to the Cathedral dome of Florence.

373 A perspective sketch according to the plans given by Raschdorff may reproduce the little building (Villino), which deserves to be retained on account of its picturesque view (Fig. 297). Olive trees, cypresses, Italian poplars, evergreen oaks, sometimes also stone pines, and extensive vineyards animate the Tuscan landscape (Fig. 303), enclosed by the line of the heights of the Apennines. Although the climate in summer is often oppressively hot in the plain, it generally continues fresh and cool on the heights. These are not free from snow in winter; like our German Black Forest, the peaks of the mountains are covered by splendid fir forests, like the heights of Valombrosa with its Monastery transformed into a Forestry Academy (3140 ft. above the sea). The flora of the Mediterranean has in the best case found admission by the artistic gardener. The landscape is not overrich in water, and requires an enclosed and earnest architectural style, even for the suburban villa.

374 Its battlement crowned and defiant walls with the extended roofs and the heavy and low towers, stand with pleasure to the eye, and the artistic design in the region with buildings, hilly and beset by little forests (Fig. 303) vicinity of the Correggi near Florence). Peace, earnestness and a feeling of comfort are expressed in the view. Classical simplicity, and no irritating architectural works disturb the harmony.

"Characteristic remains the horizontal treatment of the building site as an element of peace," or for a sloping country,

the stepped or terraced elevation with the walls of the stories extended high in proportion to the roof. The Tuscan villa is the dwelling of the Florentine patrician in the country. Here still prevails the "mezzadria" -- the division of the fruits of the land in two halves between the owner and the tenant; each has an equal interest in prosperity. (See thereon also C. von Stegmann and H. von Geymüller's great work on Tuscany. Vol. X.).

194. Villas of the Early Renaissance.

The best of the Florentine villas of the Early Renaissance must have been destroyed by the voluntary demolitions of 1529 before the Spanish siege, and what otherwise yet exists from the 15th century no longer exhibits the original appearance, but is ruined and rebuilt.

As examples of Florentine villas, as in the sequel, may only be considered those works, that fit the limits of our work, which are closely drawn and enjoin a limitation on us.

195. Villa Careggi.

In this sense may first be named Villa Careggi near Florence, according to Vasari's statements built by Michelozzo, then Villas Medici, Poggio a Cajano, Petraja, Castello, Poggio Imperiale, Borghesini, Salviati and di Collazzi.

The executing architect of Villa Careggi must have been master Lorenzo. The Composite capitals in the court indicate the year 1430; on the great fireplace in the upper story stands the date 1462. The building was destroyed by fire in 1530, but was soon rebuilt again; sold in 1779, by different changes of ownership it came into the hands of the member of Parliament Segre in Rome. The exterior chiefly retains its original appearance, characterized by a defensive gallery with battlements, whereby the building acquires rather the appearance of a mediaeval fortification. The stonecutters' work is limited to the most moderate extent; the wall surfaces are plastered, and only the angles have ashlar quoins.

One enters the villa from the garden, first passing into an irregular court with porticos on two sides, from which a plain straight stairway, covered by a tunnel vault, leads to the upper story, that besides a number of moderately large rooms contains two halls, one of which with the great fireplace mentioned still has its old wooden ceiling. The ground plan is

irregular with two projecting narrow wings, which in the ground story terminate in garden porticos with triple arches and vaulted, over one of which is to be found the famous loggia supported by Ionic columns and open on three sides, in which Lorenzo the Magnificent held the sittings of his Academy. The ceiling of this loggia was painted by Pocetti or in his style with grotesque ornaments in the most charming manner; the wooden architraves receiving the roof are supported by 18 elegant small Ionic columns, whose capitals all have their volute surfaces parallel to each other, in spite of the peristylar arrangement. Special angle capitals have indeed been avoided by this, but the affair does not look more beautiful.¹⁴⁰ Fig. 300 gives the plan of the ground story according to the great work on Tuscany by von Geymüller and von Stegmann, verified by me on the spot.¹⁴¹

Note 140. Ionic capitals employed in the wrong direction are also shown by the already mentioned Monastery of Maria dello Quercio near Bagnaja, and the little Monastery in the Certosa near Florence.

Note 141. Michelozzo. Text. p. 27, 28.

196. Villa of Giovanni de' Medici.

The Villa of Giovanni de' Medici on the southern slope of the steeply inclined surface of the hill of Fiesole is more notable, only on account of its beautiful location and by the placing of its two main parts above each other, as required by the slope of the hill, and on account of the historical reminiscences connected with this structure. It was built in 1458 - 1461, sold in 1671 by Cosimo III, then subjected to many alterations, and it is now in the possession of the Englishman Spencer, unless a change has occurred in the meantime.

197. Villa Reale, formerly Villa Medici in Poggio a Caiano.

Preserved entirely in its original condition is Villa Reale, formerly Villa Medici in Poggio a Caiano near Florence, built by Giuliano da Sangallo, (1445-1516). On a square structure as a nucleus, 137.8 ft. on a side, surrounded in the ground story by a portico on piers and 13.1 ft. wide, rises the main story having in the middle a hall 34.4 ft. wide, 64.0 ft. long and 39.4 ft. high, covered by a tunnel vault, receiving 1
376 light from the two ends, and around which are then grouped t

the other rooms. These are arranged in two equal wings projecting from the middle building, one of these being adorned by a portico with five intercolumniations and crowned by a pediment. The exterior is simply treated, the wall surfaces are covered by stucco and animated by rectangular windows, then being terminated by a widely projecting rafter cornice. (Fig. 302). The portico mentioned is characterized by colored ornamentation and its interesting capitals like Ionic; the terra cotta frieze contains small white figures with yellow garments on a blue ground, executed by the Robbias, and the tunnel vault behind the colonnade has a decoration in white, blue and gold-colored clay tiles, with the same relief divisions as the small tunnel vaults near the sacristy of S. Spirito in Florence.

Rather monotonous and defective in scale is the effect of the tympanum; the Medici arms with doubled waving bands, but again on the other hand, this extensive villa, taken as a whole in connection with the magnificent gardens and the grand park in the country between Florence and Prato, and indeed just on account of its simplicity in the rich nature, has the most wonderfully beautiful effect. Here is the true conception of the "picturesque", which is substantially based on contrasts, not yet misunderstood, a competition not undertaken between architecture and God's nature.

37 The plan of the upper story is yet original, but on the contrary, the ground story with the stairway is rebuilt. Mention is merited in the ground story by a stone connecting stairway on stone consoles, which led to the apartments of Bianca Capelli.

As noteworthy on its part is regarded the tunnel vault of the hall with its rich coffers, strengthened by four stiffening arches above it. Pope Leo X had the walls of this hall decorated by frescos, in the execution of which were engaged Andrea del Sarto, Francia Bigio, Puntormi and Allori. ¹⁴²

Note 142. Von Geymüller calls attention in his great work on Tuscany, that here for the first time the so-called "baluster" came into use extensively, while in the time before Giuliano da Sangallo, men always employed little columns.

The colored internal decoration is a work of the previously mentioned Francia Bigio; in it predominate white and gold,

The first of these is the Villa of the Medici, which was built by the Medici family in the 15th century. It is one of the most important examples of the High Renaissance style in Rome.

The second is the Villa of the Farnese, which was built by the Farnese family in the 16th century. It is another important example of the High Renaissance style in Rome.

The third is the Villa of the Borghese, which was built by the Borghese family in the 17th century. It is a famous example of the Baroque style in Rome.

The fourth is the Villa of the Capra, which was built by the Capra family in the 16th century. It is a famous example of the Mannerist style in Rome.

The fifth is the Villa of the Lante, which was built by the Lante family in the 16th century. It is a famous example of the High Renaissance style in Rome.

The sixth is the Villa of the Peretti, which was built by the Peretti family in the 16th century. It is a famous example of the High Renaissance style in Rome.

The seventh is the Villa of the Aldobrandini, which was built by the Aldobrandini family in the 16th century. It is a famous example of the High Renaissance style in Rome.

The eighth is the Villa of the Doria, which was built by the Doria family in the 16th century. It is a famous example of the High Renaissance style in Rome.

The ninth is the Villa of the Massimo, which was built by the Massimo family in the 16th century. It is a famous example of the High Renaissance style in Rome.

The tenth is the Villa of the Ludovisi, which was built by the Ludovisi family in the 16th century. It is a famous example of the High Renaissance style in Rome.

The eleventh is the Villa of the Barberini, which was built by the Barberini family in the 17th century. It is a famous example of the Baroque style in Rome.

The twelfth is the Villa of the Pamphili, which was built by the Pamphili family in the 17th century. It is a famous example of the Baroque style in Rome.

The thirteenth is the Villa of the Chigi, which was built by the Chigi family in the 17th century. It is a famous example of the Baroque style in Rome.

The fourteenth is the Villa of the Altotondo, which was built by the Altotondo family in the 17th century. It is a famous example of the Baroque style in Rome.

The fifteenth is the Villa of the Sciarra, which was built by the Sciarra family in the 17th century. It is a famous example of the Baroque style in Rome.

The sixteenth is the Villa of the Giustiniani, which was built by the Giustiniani family in the 17th century. It is a famous example of the Baroque style in Rome.

The seventeenth is the Villa of the Centellesio, which was built by the Centellesio family in the 17th century. It is a famous example of the Baroque style in Rome.

The eighteenth is the Villa of the Caracciolo, which was built by the Caracciolo family in the 17th century. It is a famous example of the Baroque style in Rome.

The nineteenth is the Villa of the Giustiniani, which was built by the Giustiniani family in the 17th century. It is a famous example of the Baroque style in Rome.

blue and red only as grounds of panels; on the egg-and-dart mouldings only the shells are usually gilded. Visible at a far distance is the mighty tower with defensive gallery and flat widely projecting rafter roof, that overlooks the simple, great building and its terraces.

198. Some other villas.

Near this lies Villa Petraja, likewise a simple building, that in the 14th century was in the possession of the Brunellescos, was restored in 1575 for Cardinal Ferdinando de' Medici by Buontalenti, and later became a favorite residence of King Victor Emanuel. Here stands also the favorite tree of that king, the stone oak 400 years old, between whose branches a stairway leads to a wooden platform. From the time of the residence of the king also dates the covering of the internal court by a roof of glass and iron.

Without special architectural value and charm is the neighboring Villa Castello, but with a park so much the more beautiful. In this and the previously mentioned Villa are found in each a splendid fountain of white marble by Tribola and bronze statues by Giovanni da Bologna. That in Perugia exhibits as the principal figure the beautiful nude maiden, wringing out her hair, while in Castello also a grotto is noteworthy, which shows various bronze animal forms above a basin adorned by fishes. ¹⁴³

Note 143. For the three royal villas of Poggio a Cajano, Petraja and Castello, gratis permits may be obtained at the "administration" in Palace Pitti at Florence. The visit is well worth while and is made without too much time. No young architect should fail to visit them.

To be added are also Villa Poggio Imperiale before Gate Romana near Florence, that received its present condition subsequently from the wife of Cosimo II, Magdalena of Austria. The exterior is also simple here, the interior is not accessible at this time, on account of a boarding school for girls located therein.

On the western slope of a hill on Bellosguardo near Florence lies Villa Borgherini, built in 1502 by Baccio d'Agnolo, forming in plan a rectangle 118.0 × 88.6 ft., with an inner court, that has vaulted porticos 14.3 ft. wide on two sides, outside which are arranged the rooms, all covered by panel

vaults and intersecting compartment vaults.

To be mentioned further is Villa Salviati near Florence, produced from a castle-like plan by rebuilding and additions about the end of the 15th century. In plan this has a columnar forecourt, enclosed on two sides by walls, on two others by buildings.¹⁴⁴ (See Figs. 299, 301). Fig. 298 gives the plan of a mediaeval fortified little villa in the most primitive design without a columnar court. The living rooms are arranged beside each other without any system, the court is enclosed by a wall, and the entire design is dominated by a tower.

Note 144. See von Geymüller, *Villen in Toscana*, p. 5.

About five miles from Florence lies Villa dei Collazi rebuilt by Bini in 1534, which was erected after a drawing of Michelangelo, but only for two-thirds. It forms a rectangle 181 × 123 ft. with projecting side wings, between them a portico with seven arches, a great terrace arranged with two flights of entrance steps. The two story building is plain and severe in its architecture with simple windows, constructed with ashlar quoins at the angles, plastered wall surfaces, rafter cornices and red tile roofs, as for all villas mentioned previously. A graceful effect, produced by the open porticos extending through two stories, cannot be denied to the building, which may well be regarded as the perfected type of Florentine villas in the 16th century.¹⁴⁵

Note 145. A good publication of the same by Bellotti, G. *Villa dei Collozzi a Gioèlli*. Florence. 1893.

199. Villas of the High and the Late Renaissance; Villas of Princes with their Gardens.

Villa architecture manifested itself differently in Rome and its immediate vicinity, its monuments mostly belonging to the High and Late Renaissance, or to the Barocco style. They become princely villas, that had to receive high society, and therefore required a different architectural programme. Their climax was attained in the 17th century. In them appeared with their gardens the truly picturesque motive of simple masses of buildings within rich gardens and park designs on a favorite site in a fruitful country, rigid wall masses somewhat receding, in contrast to the changeable and always varied outlines of massive groups of trees, by which the architec-

architecture assumed more pleasing and richer forms, which the arrangement of the garden must also follow. They became garden palaces in magnificent lawns and parks adorned by art works, permeated by streams with cascades, these with small lakes, fish ponds and grottos; rich flower beds, fountains of marble and bronze, secluded seats for resting, with shady alleys and well chosen outlooks, alternated in the most beautiful diversity. The interiors of the buildings are fitted with each and every city attraction and convenience, and are intended for an existence, that differs from that in the city only in the locality and the greater freedom of the life.

Pontana believes that the owner of a villa must observe three things:-- the ornamentation should not be carried too far, grandeur should be moderated, the quality of the building materials must be maintained -- requirements not always fulfilled.

The creation of artistic garden designs in architectural lines, which stand in harmony with the buildings, became a law for the architect, it remained a branch of architecture, and an affair for the leading architect. There was required a sunken garden (show garden) in immediate connection with the residence, sheltered from wind and weather and enclosed by terraces, connected with the dwelling by flights of steps and ramps, surrounded by imposing evergreen vegetation of trees with broad and needle leaves (evergreen oaks and stone pines), connected with wide outlooks over hills and valleys. But before all else care was taken for an abundant supply of water for ornamental uses, without which the Roman villa is not to be conceived. Fountains, water courses enlarged into basins with cascades bring life into their immediate vicinity, and afford in the height of summer fresh and healthy air, free from dust.

At the end of the 16th century the system of the Italian garden art around villas is entirely developed, "nature is made to obey the laws of art."

The transformed landscape view also required a changed architectural style, like the new natural means (water) and the altered purpose of the building, but this changed nothing in the "strong obedience to principle in general" already observed by the Florentines. And if it is said, "that the preceding epoch of the Renaissance in villa architecture adapted i

itself to the form of the ground, then might one wish to ask for examples.

It remains true alone, that the Late Renaissance and the Barocco did lose even in villas not their earnestness nor their moderate style, or even varied from the basal principle, to treat the front facade with severity and the garden facade with luxuriant richness. "As the most perfect model of a city villa," of the High Renaissance is usually taken the Villa Farnesina in Rome. (See plan and details, Figs. 304, 305).

304/ 200. Villa Farnesina in Rome.

In Villa Farnesina we meet with one of the simplest plans in general, chiefly with porticos in the ground story and halls in the upper story. A portico of five arches on piers extends before the strongly projecting wings (Fig. 304), which contain a full and a half story, while the portico comprises the heights of both. The facade surfaces are subdivided by pilasters in the sense of Alberti or of the Roman antique; the building terminates in a high main entablature, consisting of architrave, frieze and console cornice, the wings toward the Tiber being animated by a belvedere above the roof. The otherwise simple exterior was intended for painting. The frieze is opened by small rectangular windows, between which cupids and candelabras support heavy festoons. The facade (Fig. 305) is distinguished by elegance and grace. "Not built out truly born," says Vasari of this charming structure, that contains in its interior the most magnificent decorations of the entire Renaissance; paintings by Raphael, Giulio Romano, Sodoma and others, some of them restored by Carlo Maratta. Particularly beautiful is the ceiling of the portico with the lunettes. The villa was built in 1509 by Baldassare Peruzzi at the order of Agostino Chigi. Here Chigi received Pope Leo X, different cardinals and the most famous men of his time.

302 (Entire plans in Letarouilly). Technically, the interest (see data on Fig. 305) is in the use of different structural materials and their treatment on the same facade. The main cornice is of greenish-gray peperino, the figures and festoons are of terra cotta, the architrave and pilaster capitals again being of peperine. The pilaster surfaces are partly built of dark bricks and the peperine stone partly extends into them, (See the angle pilaster); the window sills in the upper story,

the parapet and plinth portions, the story belt, except the frieze, which is again laid in dark bricks, the arches with the window sills of the ground story, are all of peperine. The wall surfaces of both stories are plastered and coated with a yellowish wash, all ^{of} which permits the conclusion, that the facades formerly had a uniform, or but slightly graduated colored coating. The variegated color of the building materials cannot have been originally intended, however picturesque it appears today to the observer.

201. Villa Madama near Rome.

The unfinished Villa Madama near Rome was built by Giulio Romano after designs by Raphael at the command of Cardinal Giulio de' Medici, later Pope Clement VI. The stucco ornamentation and frescos were executed after 1520 by Giulio Romano and Giovanni da Udine. So much is stated by Vasari. It should be added, that after the death of Leo X (1521) the building remained unfinished. Cardinal Pompeo allowed the building to be burned. In May, 1527, Antonio da Sangallo again began to rebuild it after changed plans, but without completing the structure. Only when the Pope again had a free hand, men went to work energetically. Pope Clement died in 1534.

Jahn first recognized the plan of Antonio da Sangallo among the architectural drawings, and reported thereon in the *Jahresbericht der Wissenschaft* (Vol. II, p. 143). R. Redtenbacher compared the plans of Raphael and of Sangallo in *Zeitschrift für Bild. Kunst* (Vol. 11, 1876, p. 35). and came to the conclusion, "that it would be difficult to decide which of the two would be the more beautiful." Yet that is another matter.

In Burckhardt's *Geschichte der Renaissance in Italien* (Stuttgart, 1878, p. 220), with a reference to Serlio, Book 3, p. 120, 121) it is said, "that this authentic facade and plan far excels the erected building; below beside the triple arched portico is also only a niche on each side." -- The reference to page 131 is incorrect and should read 121; and the text contains a slip; it must indeed say, that only one of the two ends contains a niche. But Serlio himself says, that the second niche was designed for symmetry, but that only one niche was constructed; where each end stood against the hill, they were omitted on account of the arrangement of the rooms.

(See Italian text, p. 382). Other statements concerning the upper story and the niches on the facades agree with those of Serlio. But both the plans of Raphael and of Antonio da Sangallo published by Redtenbacher in nowise agree with the plan of Serlio, and only in part with Serlio's own design.

The possibility of another decision in the matter may result from the adjacent form of plan (Fig. 307), from the drawing of Sangallo, the sketches of Serlio, and the statements of Percier and Fontaine.¹⁴⁶ (Pl. 39, p. 30). The latter say for their work, that it will give nothing new, and the plan being a reminiscence hazarded after a manuscript plan attributed to Antonio da Sangallo the younger.

Note 146. *Choix des plus celebres Maisons de Plaisance de Rome* and its suburbs, measured and drawn by Charles Percier and P. F. L. Fontaine. Paris. 1809. -- The same authors also wrote a work on palaces, and yet a third with the title; *Recueil de Decoration Interieure*. 1812. They are also adequately known in the history of architecture. And yet Wolfli and his scholars with great persistence confuse the architect P. F. L. Fontaine with the French fable poet, Jean de "Lafontaine." The latter was born in 1691. The three initials before the name of our professional colleague denote Pierre Francois Louis.

Serlio's partial plan shows us the beginning of a square court (cortile), then the adjoining pavilion with a vestibule and on both right and left of this an oblong room. Before this is placed an open portico with three arches and with 4 semicircular niches within it, all arranged symmetrically and corresponding to them also the facade. The court wall is indeed externally square, but on the contrary is made circular inside. J. Burckhardt (p. 226) holds forth on the singular additions to a singular round court, but finally is of opinion, "that the true facade with the plan infinitely exceeded the executed portion." Gurlitt regards the creator of Villa Madama as "proof against all depreciation." In the dead angles of the court walls, circular and also straight stairs with landings are drawn in the plan, and which follow the enclosing walls. It is a misfortune, that we do not know the whole in its composition, or do not have an approximately certain restoration of it.

Of the rich treatment of the interior, an idea is given by the illustration from a photograph of Alinari (Fig. 308), and of the present condition of the exterior by Fig. 306. Grandly beautiful was the conception of the design, and the internal decorations yet today stand on the highest step of perfection.

202. Villa Pia, "Casino del Papa," in Rome.

"As the monument with the highest charm" may be honored Villa Pia, the "Casino of the Pope" in Rome, that was commenced by the Neapolitan architect Pirro Ligorio under Pius and completed under Paul IV in 1561. After 1563 occurred the dismissal of the painter.

In the midst of green shrubbery and variegated flower beds rises the building with its costly mosaic floors, its internal and external stucco work and colored decorations. The distant outlook on the Campagna, the Tiber and the Vatican gardens is made possible by a loggia extending above the roof, and a drain carried around the building protects it from water and dampness. The decorations in the internal rooms are works of Federico Zuccaro, Schiavone, Sammachini and others, the fountains being after the drawings of Fiamingo. ¹⁴⁷ A reminiscence of the villas of the Early Renaissance is the equipment of the outlook tower with the open loggia around it. On the facade surfaces is developed a love of ornamentation, that is only surpassed by those in Villa Medici at Rome. The garden design with the grounds before it, the amphitheatre, the great flights of steps, basins, fountains, ramps, resting places and terraces on a limited area are lovely, the picturesque movement is preferred for the general impression; it is picturesque without being Barocco.

Note 147. See Perrier and Fontaine, and the latest publications of researches in the history of art, issued by Königl. Preuss. Hist. Inst. in Rome, Vol. 3; Walter Friedländer. Das Casino pius IV. Leipzig. 1912.

Omit all ornamentation and limit the architecture to only the essentials, yet in spite of this and perhaps to a higher degree, it would bear the stamp of a delicate and finely harmonized idyl, and of a nappily combined effect of all parts.

On 15 copperplates the building is represented by A. Simil (Le Vatican), and indeed very much better and more exhaustiv-

exhaustively, than by Bercoier and Fontaine. We give therefrom the plan, an elevation of the building as a whole, with a section through the site, in order to show the differences in the heights of the terraces (Figs. 309, 310), and to afford conclusions as to how far the early time of the Italian Renaissance, villas built in a hilly country are "suited" here to the existing site, or are satisfactory with stepped terraces. (The gardens and the villa were formerly strictly reserved, but the former are now accessible by a permit. But both are not in the best condition. The internal rooms were not accessible to me in Sept., 1912.

203. Villa Papa Giulio.

The peculiar buildings of Pope Julius before Gate del Popolo at Rome were begun at the beginning of the 16th century according to the arrangement of Cardinal Antonio Fabbiani di Monte by Jacopo Sansovino and Baldassare Peruzzi. The Cardinal died in 1523; Peruzzi survived him scarcely 3 years, and so the works were interrupted. The nephew of the Cardinal was elected Pope in 1550 as Julius III, resumed the works again, requested the opinions of Vasari and then of Michelangelo, finally taking Vignola as his architect. When he died after a reign of 5 years, the building was left to its fate, all its art objects were removed and scattered. Pius IV allowed it to be fitted as a temporary residence for cardinals, ambassadors and princes before they entered the city. After him, Paul V maintained the architectural and garden arrangements. They again passed into dilapidation, when the imperialists and Spaniards established a hospital there in 1744. Clement XIV had them repaired, and Pius VI continued the work of restoration. In order to make the empty buildings useful, Leo XII established a veterinary school in them, but which was removed by Pius VIII. As I saw myself, under Pius IX the buildings served the papal dragoons as barracks (1866-1867), and when these left the place, a Swiss subordinate officer was installed as guard of the whole. The Italian government later transferred the Etruscan Museum there, the Etruscan temple of wood with terra cotta covering. Strikingly beautiful are the stuccoed and painted ceilings of the two halls on the right and left of the main entrance.

The plan first presents a square court, earlier a garden 90

ft. wide, adjoined on one side by a vaulted portico extending in semicircular form, before which and next the street is preceded in a rather capricious way by a casino, which contains the two halls mentioned in the ground story. A ramp stairway in a circular area leads to the upper story, that is divided to correspond to the ground story. Opposite the semicircular portico is built a pavilion with small rooms, intended for the sole use of the Pope. From the pavilion two quadrant flights of steps lead down into a lower garden with a fountain grotto, that is separated by a narrow two story building from another and higher ornamental garden.

All structures and gardens are also here arranged symmetrically about a straight principal axis, and the whole in the time of its splendor, not far from the Tiber and in connection with the vineyard at the corner of Via di Ponte Molle and the little votive Church S. Andrea, may have formed a splendid residence for rest.¹⁴⁸ The garden design and in part also the water courses, but especially the internal rooms for museum purposes and their additions are now (1912) skilfully and splendidly fitted, and the objects found are exhibited in such manner in these as to merit all praise.

Note 148. A tolerably exhaustive publication of this Villa is to be found in Letourouilly, p. 421-470 and Pls. 199-221, and also in Percier and Fontaine, Pls. 46-49.

The creations are differently judged. Thus for example, J. Burckhardt says:-- "The front building is worthless, the semicircular portico has a doubtful effect, yet the two porticos lying beyond the court with the sunken fountain court and the grotto structure have a graceful and picturesque effect, yet already with labored alternation of motives."

389 R. Redtenbacher (p. 237) terms the work the most interesting and pleasing echo of the High Renaissance. Julius III himself conceived it, the ideas of Vasari were combined in the design, revised and corrected by Michelangelo, and then put into stone by Vignola. (Many cooks spoiled the broth!). Massive and severe in appearance is the palace, that belongs to the vineyard and lies with the facade next the street, one of the best works of Vignola. Marcus Aurelius must also be right here; an art work is no worse when censured, nor no better when praised.

204. Vill. d'Este near Tivoli.

According to Wölflin (p. 109), Villa d'Este near Tivoli exhibits "a dry architecture, simply masonry and windows without decoration; the chief motive is the portico as the termination of the extended steps and terraces, that form the entrance through the garden; the house only comes into consideration in its middle portion. This type was more or less determinative for all originating in the vicinity of Rome. No single important structure is among them."

I can subscribe to the next to the last statement, but not the others. Rather do I agree with C. Gurlitt, when he says in his book; "the villa may be a great structure, in itself tasteless because unfinished, which is made effective by the solemn magnificence of plant growth," whereby he recalls the round area among flower beds with the famous cypresses, out which in the year 1549 was not yet what now astonishes us -- but still I might not wish to miss the massive plain architectural masses above the snow gardens with their water courses, or wish them to be replaced by others, differently treated. These masses provide the sole correct fancy for the splendid garden arrangement. Then further; are then the loggias, steps, ~~cramps~~ and other subordinate structures entirely without purpose? (Figs. 315, 316). ¹⁴⁹

Note 149. Allg. Bauz. 1867. p. 2, Pls. 2, 3, 4. (Measured and drawn by Adolf Gnauth and described very minutely by E. Paulus in Stuttgart).

390 The ever beautiful design was already executed in 1549 by Pirro Ligorio, who likewise built in the Vatican gardens Villa Pia (1560) for Pius IV. A smaller design from the same time in the beautiful garden of Palace Colonna in Rome may be placed beside it.

391 The villa garden d'Este comprises an area of 398,667 sq. ft., being 698.8 x 570.9 ft., and it is divided into a lower one comprising the three ponds, and an upper one treated as a vast terrace, on whose upper level rises the palatial villa with its front and side buildings, with its simple internal court with piers. Only the south side of this next the garden is treated in an interesting manner.

A faithful view of the entire design is reproduced from the journal mentioned. (Also see Fig. 316 and the colored Plate

VII. One of the most important features of the Villa is the fact that it is a single-story building, and the only entrance is through the main door.

Montezuma, and as a result, the Villa is a very important building in the history of the city.

305. Villa Montezuma, near Montezuma.

Villa Montezuma was built in 1905 by Juan V. de la Cruz, and it is one of the most important buildings in the city. It is a single-story building, and the only entrance is through the main door.

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VII, plan of the garden and section through the terraces).

392 Among the designs near Rome, as country villas are to be made particularly prominent, are Villa Aldobrandini and Villa Mandragone, and as suburban villas are Villa Borghese and Villa Medici.

205. Villa Borghese near Rome.

Villa Borghese was built in 1605 by Paul V after the designs of Giovanni Vasanzio (Giovanni Fiamigo), the garden design was planned by Domenico Savino di Montepulciano, and beautified by the Roman architect Girolamo Rainaldi, while the water courses were constructed by Giovanni Fontana. The great casino has at the front two projecting pavilions and a portico with five arches on piers extending through one story, to which leads a flight of steps at two sides. The wall surfaces of the facades are most richly decorated by stucco ornaments, niches with figures, medallions and antique fragments; two ~~ones~~ belvederes rise above the roof surfaces, and thus give the building the character of cheerfulness and elegance. The interior contains the costly collection of antiques and paintings of the prince. The second hall in the first story with its marble decorations and mosaics is perhaps the most beautiful interior in the world. The picture galleries in the second story are covered by silk tapestries of mignonette color, the plinth and doors are yellow, the ceiling in varied colors. All is perfectly executed in its new treatment.

The plan is symmetrical and beautifully composed on axes. On the main axis the open vestibule (narrow vaulted portico) 393 is followed by the great internal vestibule (antenna), and from this one enters the so-called imperial hall. These are particularly beautiful in their harmonious proportions of length and breadth to height. Right and left of these principal apartments are on each three smaller side rooms; beside the imperial hall is an oval stone stairway, that leads to the upper story and the basement (Fig. 387). Gurlitt in his description confuses the street front with the garden front. Wölflin recognizes in this villa a typical Barocco villa.

The garden and park designs are here no longer connected; the separate structures lie scattered between high clumps of trees, penetrated by shady paths, and that lead to little temples, semicircular seats, enclosures for animals, ponds, small

islands, and ideal structures, fountains, etc. A residence pavilion for the family, a compartment adorned by antique fragments, a chapel with side rooms, an aviary, an elongated hippodrome, a pheasantry, dwellings for gardeners, meadows with wild plants, animate the grand scenery. English gardening demands admission here. Recently the garden was joined by bridge with Monte Pincio to form a great popular park, which belongs to the most attractive things, that modern Rome has created.

206. Villa Medici near the City Wall of Rome.

Villa Medici is arranged on nearly the same plan, and located next the old city wall of Rome, was built in the middle of the 16th century by Giovanni Ricci da Montepulciano after the drawings of Annibale Lippi, and the former was made Cardinal by Julius III in 1551. The building was enriched by antiques and enlarged by Cardinal Ferdinando de Medici, a son of Cosimo I. The main building is of rectangular plan with a vestibule opening toward the garden, two circular stairways and adjacent living rooms, with three-aisled entrance from the street. At a right angle to this stands the great gallery of antiquities, enclosing a portion of the garden design. Next the street the building exhibits two high stories, each with a mezzanine, and high additions with two pavilions. The garden facade is most richly adorned by reliefs, which in combination with the picturesque structure makes this villa the most charming example of this kind of buildings in the Italian Renaissance (Fig. 311).

207. Villa Mondragone near Frascati.

Villa Mondragone near Frascati contains two small internal courts besides the great main court, and has at the rear the so-called theatre near the garden design, on the front being the extended terrace with the fountain bowl supported by four dragons, and the wonderful outlook on the Roman Campagna. Beneath the terrace are arranged kitchens and servants' rooms. A view of the dragon fountain is given by Fig. 388, and Fig. 384 is one of the water theatre there.

208. Villa Aldobrandini near Frascati.

Villa Aldobrandini near Frascati was built in 1598 for the Cardinal of the same name, the last work of Giacomo della Porta, which Domenico completed. It is the most grandly beau-

beautiful with the regular arrangement of massive ramp-steps, terraces, cascades and fountains, semicircular niches with shady and cool halls and subordinate rooms. (Fig. 383, plan and section). The place before the residence is somewhat neglected, and its facades are coated in the usual manner in light yellow, grayish yellow and ultramarine blue tones.

209. Villa Pamphili-Doria near Rome.

Further is yet to be mentioned Villa Pamphili-Doria with its symmetrically arranged casino with projecting middle structure, arranged with elongated flower beds and with fountains, erected in 1644 by cardinal Pamphili after the drawings of Alessandro Algardi. A very skilful utilization of the site is here to be emphasized. The casino is made three stories in height. The splendid park designs (from the wall is the finest view of the dome of S. Peter) are particularly remarkable. On days free from visitors, a picture of earthly felicity!

210. Villa Sacchetti near Rome.

Villa Sacchetti now exists only in ruins, but had an imposing niche motive on the facade, and indeed once belonged to the most magnificent architectural creations. (See the plan and section in Figs. 313, 317). Changed into great dimensions, the well known charming motive at the terminal buildings of the Vatican court gardens by Bramante is utilized in the most effective way (Fig. 312). Transferred to small dimensions, the motive reappears in Villa Falconieri near Frascati.

211. Villa Albani.

To the most important villas of late times belongs that built by Cardinal Alessandro Albani with garden design by Antonio Nolli. On an elongated but narrow plan a great portico with piers rises at the middle with a story above it and rooms behind it, adjoined on the right and left by one story porticos with closed rear walls; at their ends are smaller rooms arranged for the reception of art works, and near these is the charming temple portico with the well known antique caryatids. At the left of the principal axis is a billiard room, on the great axis being flower beds with fountains, down to which leads a great flight of steps, and at its end is a coffee room with a semicircular open portico (exedra). Magnificent groups of trees with shady alleys complete this artistic

design.

212. Villas Barberini, Negroni, Taverna and Farnesiana on the Palatine.

In the frequently mentioned works of Percier and Fontaine¹⁵⁰ are still illustrated; Villa Barlerini (built about 1626 by Luigi Arrigucci and Domenico Castelli); Villa Negroni built in 1570 by Domenico Fontana, with regular garden plan and a great irregular front garden, composed about a middle axis; Villa Altieri, Villa Bolognetti, Villa, Taverna, Villa Muti, Villa Colonna and Villa Farnesiana. The so-called Farnese gardens with their aviaries like pavilions, subterranean grottos, ramps and steps, sgraffito decoration of the walls, were still in the best condition in 1866-1867. The gardens were purchased by Napoleon III (1865), and then by the Italian government in 1870, for the purpose of excavations on the Palatine. They have not been made more beautiful thereby, but knowledge has been enriched at the cost of a great excavation of ruins. A representation of the landscape and the vegetation with the characteristic olive trees and stone pines is given by Figs. 318, 319. The scenery is entirely changed from the Tuscan. And it again becomes different in the wooded heights of Monte Cassino. There first charms us the much prized Villa Lante, small, but a magnificent example of Roman villa designs, still occupied and well preserved on the whole.

Note 150. Percier and Fontaine give a restored plan of the building in their work, *Choix des plus celebres Maisons de Plaisance de Rome et de ses Environs*. 2 d. edition. Paris.

213. Villa Lante. (1824).

The first designs for Villa Lante near Bagnaia¹⁵¹ were made by Cardinal Raffaello Sanseverino Riario in 1477. Nicolo Ridolfi from Florence, fifth Cardinal archbishop of Viterbo, had a portion of the building erected; but his successor, bishop Gualteri, rented the house and garden. Giovanni Fornasco Gambarara, sixth Cardinal bishop, completed about 1564 the lovely residence, and had the building adorned by paintings, mostly by the hand of Antonio Tempesta. Cardinal Alessandro Damasceno Peretti or Montalto, the nephew of Sixtus V, made himself its possessor in 1588. He built the second casino and had the water channels and gardens constructed at a great outlay. Pope Alexander VII gave the ownership to the Duke of Bommarzo

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of the Lante family, to which it has belonged until the present time, making its summer residence there sometimes.

Note 151. See the Essay by the author in *Zeits. für Bild. Kunst.* Vol. 11. 1876. p. 202. Die Villa Lante bei Bagnaja, and the Monastery of S. Maria della Quercia.

Without sufficient certainty, it is assumed, that Vignola was the master of this lovely creation, indeed for the reason, because he built Caprarola not very distant from it. The assumption must be more correct, which was entertained by Percier and Fontaine, according to which the villa was the work of several skilful architects, who labored on it at different times until the completion. ¹⁵²

Note 152. See the publication not correct in all parts; *C Choix des plus celebres Maisons de Plaisance de Rome, etc.*, (Paris. 1809) and Fig. 320, which gives the general design of the villa after a photograph, and further Fig. 321 from my own sketch.

One enters on the design of the Villa Lante through a high gateway arch adorned by columns, first in a flower garden shining in the thousand-fold splendor of color of a luxuriant southern flora, that is architecturally subdivided into box enclosures, separated by graveled paths. The middle of this garden in the longitudinal axis of the plan is adorned by a rich and originally constructed fountain in the midst of a great square basin enclosed by balustrades (Fig. 321). Four little bridges lead over this to a second circular basin, from the middle of which rises an octagonal substructure, on which stands a group of figures larger than life. Four slender and nude youths, between which are seated two pairs of lions, support the arms of the Montaltos, mountains with the golden star above them. (Fig. 321). Unconstrained and alive, beautiful in outline and drawing, these forms join in a singular way in holding the disk with the emblems of the arms with one hand, bearing in the other a bunch of fruits or flowers; the water springs from the pedestal between the figures in full streams to the underside of the plate, and from the rays of the star down over the group in fine jets; the lions spurt water into the circular basin, and in like manner the masks on the pedestal.

In the great square basin divided in four parts by the brid-

402 bridges are found on the surface of the water four charmingly sculptured little marble ships with steering figures, the small vessels richly loaded with flowers, mostly blossoming oleanders. The pedestals of the balustrades bear vases, pine cones, obelisks, etc., their ornamentation by little figures unfortunately injured by time. Grapes and their supports have assumed from the water a deep bronze-brown tint, while the remaining architectural portions have mostly remained light yellow, and are covered with moss in spots; to these are added the richly colored ornamentation of flowers, of mirror-like surfaces of the water, the silver streams of the waterfalls -- all together presents an enrapturing view.

The access from the flower garden to the first terrace of the park is formed by two broad flights of steps, that lie along the two residence pavilions (casinos), kept entirely alike in their architecture, and two narrow paths bordered by box, that intersect in zigzag lines the green leaves of the saruberry lying between the flights of steps. The casinos exhibit at the level of the ground toward the garden, open triple arched and vaulted, rich and beautifully painted porticos, an example of which is given on the adjoining Plate VI, while the upper story is animated by the arrangement of double pilasters and blind recesses with rectangular windows, topped by segmental and angular caps; the frieze of the main cornice has little horizontal rectangular windows; the roof rises in hip form and is crowned by a closed belvedere. The mouldings of the architectural portions are very flat and carelessly executed, and the facades are constructed entirely of gray tufa stone.

403 Interesting and beautifully preserved are the high and airy internal rooms of the principal story; stucco ceilings with rich paintings, friezes in high relief and rich painting, with ornamental mural decorations alternate together in the most varied manner. In the shade of mighty plane trees then rise abruptly on the first terrace fountains, pouring just from a grotto, the highest point of the park. Between two open portico structures (Fig. 323) is built a semicircular niche of stones, richly covered by climbing plants and shrubs, from which the water falls into a great collecting basin, shaded by the overhanging branches of trees. From this is supplied

supplied a fountain with bowl surrounded by box borders and benches, which throws its streams high into the tops of the trees. From thence the water flows in a straight line in a channel ornamented by a border with repeated scrolls, ending in the form of a colossal crawfish (gambero) with a flat basin between his claws, pouring its water into the great semicircular fountain ornamented by reclining river gods. (Fig. 322). From this is fed a quietly flowing bird trough 23 paces in length, that is flat and shallow between two rows of magnificent old plane trees, again supplying its water to a lower great round fountain with a charming display of water. Steps between the streams connect the higher with the lower grounds.

This place is the most magnificent of the entire park; against the heights are seen the closely leaved and majestic trees with the low hanging branches gleaming emerald green in the sunshine, between these but small areas of deep blue sky, below the water, magically lighted by the shining rays of the sun; toward the plain the view of the flower garden with its splendid fountains with figures, through the portal on the picturesque light gray houses of the little city with flat brown tile roofs, and over these to the reddish Campagna beyond with Monte Fiascone and Monte Argentario with its wonderful outlines. The designs, executed with so much taste and intelligence are surrounded by extensive forest areas, intersected by beautiful walks, pleasantly animated by seats, ponds with swans and basins. The chief part of the forest design consists of evergreen oaks; against the enclosure on the hillside are planted cypresses, that belong to the most beautiful in Italy. (See Zeits. für Bild. Kunst. Vol. 11, 1876). p. 292. Villa Lante near Bagnaja by J. Durm).

Not easily will be found a more instructive example of a Renaissance villa with its gardens and artistic waters on a relatively small area, than this in the Cimino hills. What particularly charms us northerners is the magic of trees and flowers with the water jets, that here surround us, but which can scarcely have been designed by the builder 400 years ago. Then later plans, new buildings, all being well preserved and cared for -- the vegetation being now in the highest bloom of mature age, and so much destroyed by the years or come into decadence. In the publication of Wölfflin's "Lafontaine" not

all is as it should be, which may frequently be excused by the smallness of the scale, but other things may be changed in time.

404 The belvedere on the casino exhibits in the publication mentioned a substructure between the slope of the roof and the window sill belt. According to my sketch of the year 1876 this does not exist, and also not according to the photograph. (Fig. 320). The architectural subdivision is otherwise correct and will be understood by those informed. (Likewise the horizontal rectangular windows in the frieze are retained). The "blind arcades inserted (sic) between the coupled pilasters of the facade surfaces of the upper stories are correctly given by Percier & Fontaine; on the photograph, they cannot be recognized. They are in great part worn away by weather and are now scarcely visible in many places. Too flat relief and bad material (tufa) are the causes. The windows with angular pediments are correctly given. Pilasters and windows have parapet bases extending down to the story belts, which are not shown in Percier & Fontaine. In these the arcades of the ground story are walled up and given as doors and windows, which is no longer the case. The archivolts are not moulded and they have keystones, that were ornamented. The paintings in the portico on the right side are preserved and still form a beautiful addition to this garden portico; those of the left arched portico are ruined, the portico being utilized for stable requisites. The side substructure of the casino is coated white, and the lantern on the roof has a yellow wash. Plate VI gives a representation of the kind of paintings in the garden portico mentioned. It is not impossible, that in the year 1809 the condition was as it is given in the work mentioned. (See the photographic view, Fig. 320). Our colleagues were yet otherwise careless workers there. Bagnaja appears to me as a nasty final number of the work, for whose contents we must otherwise be quite grateful to the authors named. In general, the gardens and the ornamental waters have indeed remained as given by Percier & Fontaine, but not in details. The enclosing of the cascade between straight walls is incorrect, and the illustrations of the fountains I leave much to be desired. The forest of stone pines drawn on Plate 68 of the work may indeed have been so at the end of t

has 18 in diameter. The wood is very hard and heavy, and is used for building boats and for other purposes. It is found in the mountains of the country.

The water of the river is very pure and is used for drinking. The river is very deep and is used for navigation. The river is very long and is one of the longest in the country.

The only village on the river is called "Village of the River". It is a very small village and is used for the purpose of the river. The river is very deep and is used for navigation. The river is very long and is one of the longest in the country.

The river is very deep and is used for navigation. The river is very long and is one of the longest in the country. The river is very deep and is used for navigation. The river is very long and is one of the longest in the country.

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the 18th century; now great plane trees with low hanging branches have taken their places, but it should not be said, that all stone pines have disappeared. (See Fig. 321, the great fountain.

The water course from the upper grotto down to the fountain with figures is still in condition. Had the publication given only a longitudinal section, then one might indeed miss the inaccuracies in the architectural drawings. But also thus the plan gives a good representation of what the architect of the house and gardens desired.

The only Villa, that induced our architects, Percier & Fontaine, to give a section of the ground, by which the terraced elevation of the design is evident, was the previously mentioned little Villa Sacchetti built by Pietro da Cortona in the vicinity of Villa Madama. (1626). Why have they withheld certainty and presented uncertainty to the inquirer? They wished to give the entire handsome conception of the design, although it was known to them, that an accurate basis therefor was wanting. "But having found no written authority suitable as a guide in this enterprise, we have sought in the traces of what has been built, indications from which the plan of restoration and completion has been composed, referring to Plate 39.

405 So much was clear to them, that they had to do less with a residence than with a pleasure villa. The attempt was indeed worth the labor, even with these results.

214. Casino of Villa Giustiniani in Rome.

On the little casino of Villa Giustiniani at Rome, Letarouilly (Vol. 3, Pl. 323, p. 673), also gives conclusions in text and illustrations. The facade is adorned by reliefs and is in good proportions, the loggia (portico) is well considered, the cornice is good and has a certain elegance. The garden design is modest, but the whole taken together is unusually expressive and determinative of the owner, who possessed good taste and good will, but was not blessed with wealth in the highest degree.

Outside eternal Rome are found allied smaller and larger villa designs, that so far as concerns desire and ability, frequently keep pace with those presented there. To the Roman Giustiniani may here adjoin the Paduan Giustiniani.

215. Vill. Giustiniani in Padua.

In the court or the gardens of Villa Giustiniani at Padua stand adjoining each other at right angles a casino and a garden portico, which we reproduce in Figs. 324, 325 after our own drawings, buildings that were formerly erected by Falconetto for Luigi Cornaro, entirely distinguished and noble in general appearance and detail forms. Of the five windows of the upper story, three at present are walled up and exhibit plaster figures.

Very prettily treated is the architecture of the casino with the little octagonal hall in the middle, surrounded by four rooms, the stairway, and four connecting passages to three windows and the main entrance. Airy and good in proportions are the triple arched loggia in the upper story and the arcades, that form the separation between court and garden. The interior is decorated by small coffered vaults and grotesque paintings, which at the time of our sketch were still preserved in the best manner, but at present suffer, where the rooms are rented. Through the street facade a narrow passage leads to the court, in which one would not expect such works of the Renaissance, which unfortunately are going to ruin.

216. Pleasure Villa del Te near Mantua.

To the small villa may be contrasted the well preserved great one in Palace del Te with its court, garden and casinos, the great princely villa of the Gonzagas in Mantua. Built by Giulio Romano (1524-1535), adorned by mural paintings and grotesques, enriched by the works of Francesco Primaticcio and others, the internal treatment of this belongs with the most perfect, that upper Italy has to show. The plan exhibits a nearly square court (152 x 148 ft.), which is surrounded by living and state apartments (depth of rooms about 27.2 ft.), without the arrangement of a corridor. On the longitudinal axis lies a vast open portico, which according to R. Redtenbacher, "might be termed heavy, were not its proportions ungraceful, the architecture overloaded by mean details." Peculiar then remains there the solution by the intersection of 3 arched lunettes in the great tunnel vault of the portico. (See Section on Central Designs and Church Buildings). C. Gurlitt calls the tendency of the building overpowering and unsatisfactory, the architecture of the court being worse than that

of the exterior. I have characterized it in Section XIII of this book as unimportant and dry, and as never becoming typical for Italian villa or palace architecture. From the praised and scorned portico the way further leads over the bridge of a fish pond to the great inner ornamental garden, terminated by a semicircular exedra with niche, at the beginning of which are placed the casinos, one of which serves as a bath pavilion with very charming plan and decoration (see ground and site plans, Fig. 251). The exedra was destroyed in 1680, but at the command of Napoleon I was again rebuilt in a somewhat changed form.

The building is one story, over some rooms also having a half story, built of cut bricks, which are covered by plaster and imitate ashlar construction.

In my opinion, the street facades may recall something of the architecture of Villa Madama in Rome, but certainly not the east facades. The garden next the fish pond is divided into three approximately equal parts, the middle one of these being crowned by a temple pediment. Three round-arched and four rectangular openings penetrate the lower wall masses, the supports are placed in pairs, partly coupled in form, rather heavy and treated as columns of the Tuscan order. The side parts at the right and left, but whose supports are irregularly arranged, are similar in motives and formed alternately as piers and columns (Fig. 250).

The small depth of the rooms before the window recesses, as well as their diminished height in comparison with the main enclosing walls, permit the conjecture, that these were not foreseen in the original plans and only originated during the construction. Without them the side wings of this garden facade would even become monotonous. But perhaps they were even designed as a pleasant place, from which to see the play of the waves on the carp pond.

To a singular conclusion comes A. Haupt ¹⁵³ in his consideration of the style of the building. He holds it to be the final member of a developed series, that begins with the Palace in Urbino and leads to Raphael's Villa Madama. The "few" extravagances here met with were based distinctly on Raphael's studies of the antique and his last ideas. The dropped "keystones of the architrave," drawn as elongated triglyphs besi-

beside shorter ones in the same series, may be a proof, that Giulio Romano desired to recall (antique ?) Roman structures. As if dropped keystones were a characteristic of that time! To this is added yet the heightening of the wonderful impression (sic) of the suspended stories "over" the entrance doorway of the Temple at Baalbec! Lord preserve us! (Fig. 206).

Note 153. Dr. A. Hout, Building Councillor and Professor in Hanover, says in his publication on Palace Architecture in upper Italy and Tuscany in the 13 th and 18 th centuries, Bologna, Ferrara, Modena, Piacenza, etc., that the ground plan of Palazzo del Te was first published by him with a very modest text (1908-1911). The original, Fig. 195 of the first edition of this book, dates from the year 1783 or even earlier. Others lie between. Fig. 251 of this new edition is redrawn from the original mentioned.

Do we still see in Mantua anything further, that Giulio Romano otherwise undertook a "few extravagances" as the representative of the Roman antique?

Are his spirally twisted columns in the tournament court of Palazzo Ducal proper architectural expressions on a monumental building? Or is not rather Palazzo Colloredo (now Palazzo di Giustizia) a real extravaganza? (Figs. 206, 270). Battista Bertano had the execution of this. How much of it is to be laid to his account is hard to say. R. Reitenbacher (p. 207) calls it "unworthy" of a Giulio Romano; C. Gurlitt holds the facade to be the ugliest among the monumental buildings of Italy (p. 91), only a few works of the South and of the closing 17 th century could rival it in this. His description of the facade is drastic and not entirely true; for this has in the proportions and the mouldings of some parts also something beautiful. On Palazzo del Te the architecture for me is only the supporting skeleton, whose completion could scarcely be awaited, before applying the most splendid decoration.

When it was said above, that Giulio Romano's Mantuan garden facade found no echo in the remainder of Italy, then should not be forgotten occasional cases in the 19 th century, from the time of the "Neoclassicism" in the land of citrons, as for example, the theatre facades of S. Carlo in Naples and della Scala in Milan. In foreign countries it found a representative in the Englishman Vanbrugh (born at London, 1666;

died 1726; Dutch origin), whose works are characterized as such without greater artistic depth, full of caprices and awkwardness. (Few see the angle pavilions of Palace Blenheim, and the design for a palace facade in O. Gurlitt (*Geschichte des Barockstyles in England*. III. p. 367). But even these have found their admission and still find them).

But the Mantuan architecture of Giulio and the works of Vanbrugh lie somewhat more than 180 years apart. (Wherein I neglect at first the intermediate influence of Palladio (died 1580) on the architecture of England and other states). And again 180 years have flown, and we are in condition to be able to honor Julius Romanus renewed also in the German empire. Everything returns again; men must only be able to wait and remain conscious of the past.

409 217. Villa Imperiale near Pesaro.

Facing the Adria lies the notable Villa Imperiale near Pesaro, erected at different times, and composed of two buildings connected together by an elevated passage.

The construction of the older portion is attributed to Alexander Sforza; it is stated of Frederick III, that he laid the corner stone, when returning from the imperial coronation at Rome. Above the entrance gateway is a tablet built in, with the sforza arms and the inscription beneath; "Alexander Sfortia, 1468." But Sforza had already died in 1466. From the mode of execution, it must have been inserted later. In the plan the living rooms are now grouped around an open court, enclosed by porticos on three sides, a straight stairway with landing leads to the upper story. The intercolumniations in the court are uniformly 15.4 ft., the columns themselves are 13.0 ft. high, crowned by bell capitals like Corinthian in the forms of the early time of the Renaissance. They support segmental brick arches, which have simple mouldings. By visible iron rods the columns and arches are ensured against yielding.

The dimensions of the structure are not great; its area is about 108 x 98 ft. altogether; on two sides extend terraces. As a mediaeval part a square tower is attached to the building, that appears to be restored in the upper part. The external walls are constructed of plastered brickwork, whose window openings are irregularly arranged, as required by the arr-

410 arrangement of the rooms in the plan. Since at the rebuilding by Genga one side of the court was walled and the stairway was rebuilt, the original windows met with the same fate, and the existing ones were arranged according to the needs or as the new arrangement of the rooms required. The tower projects but little from the facade, the main cornice is constructed with the aid of normal stones in the early mediaeval way; the fireplaces are placed in the external walls, as everywhere in Venice and Frauli, and they project very considerably; some must indeed be later additions (Fig. 73). The existing consoles or corbels with arched frieze on the free angles and the middle of the south front must have supported small structures with battlements. A general view from my drawing of April, 1910, is given in Fig. 327.

The internal rooms suffer somewhat from smallness, especially in dimensions of height, and the perspective view in the great hall is deceptive (Fig. 331).

On the internal decorations Thode expressed himself in *Janhr. der Kön. Preuss. Art Collections for 1883*, proving the work of Giovanni Battista Dorsi and the value of his landscape paintings, that according to the statement of the custodian must have been restored about 30 years since. F. Seitz decides in a dissenting way the entire internal decorations. (*Deutsche Bauzeitung*. 1905). Very thoroughly and supported by very good illustrations, Dr. B. Patzak occupies himself therewith in his book on *Villa Imperiale near Pesaro*. (1903, Chap. IV; internal decorations of the Sforza Villa). He makes therein a critical analysis of the frescos to be very difficult, that for the greatest part have been painted over or are ruined, and whose authors have been little investigated in his other creations, and blames H. Thode, that he has passed over those difficulties with general conjectures, that lack all foundation. I do not blame him for it. Patzak first presents no less than 53 illustrations of paintings from everywhere, and still others later, but not from *Villa Imperiale*. For what is offered the material presented seems too heavy to me. Then the series of frescos of the villa first begins with the decoration of the so-called hall of the oath and its treatment of the ceiling and wall surfaces, totally lacking in motive. Seitz is right, when he terms the red curtains supported

by cupids over the landscapes as the work "of a new painter with tapestry motives;" but he goes somewhat too far in the estimation of the other works. In the "chamber of the caryatids" (Patzak, Fig. 206), the figures have about the height of the doorway for passage, thus scarcely more than life size, and are anything but "colossal." They support garlands in arched form and reeds and belong with one of the most interesting ornamental motives of the room. The ceiling with lunettes of the chamber of the busts recalls Giulio Romano and is a good piece of decoration. Likewise pretty is the ornamentation of the cabinet with the Raphaelesque graceful caryatids, likewise only life size, as well as the chamber of the cupids, etc. Here again the materials presented for comparison exceeds the number of original pieces.

In the description of the Sforza building F. Seitz has made some small errors; for example, the statement is incorrect, "that the tower rises without projecting from the surface of the wall," for it actually projects therefrom (see Fig. 327 and the great autotype of Bertulli in Patzak, p. 61). It is further said, that the south front has no projections, but one such is drawn by him. (Fig. 1, View of the Vill.; Deutsche Bauzeitung. 1905). Only a chimney is actually carried up at that place. The addition of a good section through the depth of the building would also be more favorably received than the doubtful birdseye perspective. The view of the interior is probably drawn from a bad photograph; such a bad view would not be received by the human eye; one believes it refers to a semicircular arch beside a massive oval arch. It is well, that that a plan gives the explanation. (Also see the autotype in Patzak after Bertulli). On little errors in the mode of expression, as for example, sparing cornices, the distribution of the windows according to the "internal needs," flat main cornice, widely projecting capitals of the columns in the court (the contrary is correct; see the illustration among Corinthian capitals), we shall overlook, for therein Patzak is better, even if he speaks of "lenticular supporting piers," or of the "cubic totality" of the building, which forms a two story cubical structure constructed of bricks," or of a "vestibule with niches," or the "battlement parapets," which must denote a series of battlements. What a "hill slo-

slope of a roof" may be, will not be understood everywhere. Also of little value is the discussion of the "irregular cube" and the "animating and magical play of the ornamental shadows," etc. I prefer to omit a dissection of the esthetic deductions.

The frieze of the Rovere building bears the inscription:--
Fr. Maria of Metamensis erected this building on account of
the return of the beautiful Leonora, wife of his soul."

The sforza structure, freed from its later additions, was the typical image of the Tuscan country house of a nobleman. On it may also be observed, now men have aided themselves in Italy at that time by using normal bricks for constructing a cornice, which certainly no one had made of cut stone before or afterward. (See Section V, Fig. 78).

According to Vasari (Vita di Genga. XI), the second building was built by Girolamo Genga in 1528 for Duke Francesco Maria della Rovere of Urbino, but never completed.

H. Thode places the date of erection of the Genga structure in the year 1530. That it was never finished is indeed based on an error concerning the condition of the building at that time.

412
413 It rises in three terraces on the inclined site, and it shows below an imposing portico story, over this being a closed pilaster facade, behind which lie the great state apartments with the court. (See Fig. 329 and the tenth proposition of Book 7 in Serlio).

Covered stairways lead from the ground story at the right and left sides of the structure to the upper story with the internal court and the grottoes. Opposite these opens a five aisled portico with columns and piers, through which one passes into the oblong tunnel vaulted salon with its exedras and side rooms. (See Fig. 35 in Patzak after Bertulli). A magnificent piece of architecture! (Also see Fig. 330). Above the grotto rises the first ornamental garden with its espaliers and greenhouses and the facade toward the South. The last terrace forms the great garden with the enclosing wall next the hill forest. (See the section on the basis of the drawing of Buonamicis, illustrated by my own notes, and Fig. 329).

With its court, garden and terrace designs, the extended external terrace with the view of the rich landscape and the two belvedere buildings gives the structure a tolerably correct

image of the type of the Roman villa of the so-called High Renaissance -- but without its water courses and fountains! The building was going to ruin; F. Seitz gives a view of its appearance in the year 1890. Its present possessor, Prince Albani-Castelbarco, is having it restored. What is done is made good. Fig. 328 gives a partial view of the restored angle pavilion, after my drawing in April, 1910. ¹⁵⁴

Note 154. The villa was abandoned from 1737 to 1763; Clement XIII gave it to the Jesuits, who were able to fix it somewhat. In 1777 it came to the Albani, who still possess it and restore it (according to F. Seitz). Also see L'Imperiale Castello on the hill of S. Bartolo near Pesaro, formerly of the Sforza and of Rovere, now of Prince Albani, described and illustrated by Gualterio Federici. Pesaro. 1881.

This building was constructed of bricks like the Sforza building, and it was coated plaster with the execution of the consoles in the cornice, the raised letters of the inscription in the frieze, and the balustrades, which are made of Istrian limestone, white marble and soft limestone. The bricks employed in the restoration have a light red color with white rubbed jointing, so not prominent. Probably the architecture was also painted, but did not originally need to be so. Perhaps the Jesuit fathers also took part in this. The south front is broken by two projections of unequal width (the irregularity resulted from the plan of the connecting passage from the old to the new building), its facade consisting of two stories, the lower one of which consists of an arrangement of closed niches with a series of piers, the upper one being animated by coupled slender and slightly projecting Ionic pilasters with intermediate semicircular niches and small windows. Above it extends the antique-like main cornice and over this is a high attic with the marble balustrade mentioned and the two belvederes. The latter are in the proper place in Herdtle and Seitz, incorrect in Mancini (Patzak, p. 84).

For lighting the internal rooms lying behind the south front are only drawn the two side rectangular windows over the niches, while the projection shows a triple arrangement of doubled windows (Fig. 328). The wall surfaces of the three niche panels were afterwards enclosed on three sides, when those of the two window panels have instead of enclosing bands, coupled

pilasters or half columns to enclose them. That was overlooked by Buonamici and after him by Herdtle; Mancini and Seitz draw it correctly. According to Seitz, the porticos with niches of the ground story must have their model in the side aisles of the Basilica of Maxentius at Rome. Why refer to the highest? What have these two designs to do with each other? Compare then like with like. A nearer model, serving a similar idea for like purpose would then be the substructure of the portico in the Villa of Hadrian; there at least the grand proportions are approximately the same, but at Pesaro are even smaller than in Tivoli. (See Dorn, *J. Baukunst der Etrusker und Römer*. Part II. Vol. 2. 2nd edition, of this "Handbuch".

The arcivolts of the niche arches are not moulded, but are characterized by the keystones, the spandrels of the arches being enclosed by flat bands. The grotto facade of the court shows a similar subdivision by Ionic double pilasters and niches as on the external south side, but in the middle is a great arched niche, through which the entrance to the grotto leads under the terrace. The frieze is also decorated here by an inscription with large and skilfully executed letters.

416 (See text). That this wall lying opposite the salon supports a terrace is indeed a technical caprice. (Seitz, p. 416). S
Stucco remains from a room of the upper story of the Rovere Villa are given by Patzak in Fig. 66 of his book.

It is a merit of F. Seitz, that in his Essay he has given the plans of both villas according to the precedent of Buonamici (see Fig. 30 in Patzak) to the great public as opposite in their connection. The combination of the two sketches was undertaken by him, but without correcting the faults of Buonamici in regard to the arrangement of the tower. (Fig. 326). What Herdtle in Burckhardt (1878) gives in plans and sections according to drawings from the archives of the Municipio of Pesaro, he indeed found in existence there, and the errors from what Seitz gives are not so important, that one must pay great attention thereto, as occurs. His dimensions agree, and only for the projection from the south front has he erred. (See Fig. 149, Buonamici-Herdle and Fig. 2, Seitz). Seitz moreover gives only the plan of the upper story of both palaces. Herdtle's section is correct (Fig. 151 there) and cont-

contributes more to understanding the plan, than various others. It requires at most a completion in general. The plan of the fore garden at the south with its deep and shady niches, the court protected from the sun in its dim coolness, the social rooms in the upper story with their softened light, the view from there over the elevated ornamental garden, the arrangement of the great garden with its walls and the terminal park make the building of Genoa a complete masterpiece, that well deserves the consideration of all and preservation to distant times.

218. Genoese Villas.

The villas of Genoa suffer in part from the same lack as the Tuscan; scarcity of water and lack of rich forests; but for this one has as compensation a most noble outlook (Boboli gardens near Palace Pitti in Florence, Villa Pallavicini in Genoa) upon a blessed country, hills and the distant sea. "Mountains without castles, sea without fish," rough and hot winds, exposed to dusty country roads, yet these country seats have their advantages again in the luxuriant vegetation of the Mediterranean. To the stone pines, cypresses and agaves, which are in part repeated at the lakes of upper Italy (Figs. 332, 333, 334), are added palaces in the Riviera. Farseeing natures, merchants of great energy, came from these small areas of the earth, but no artists nor art-requiring men. Capital must yield a monetary revenue, and still we find no poverty in matters of architecture. In the construction of the villas economy appears in the use of marble, in its place men being satisfied with split stone masonry with plaster and stucco coverings and variegated painting. The full colors of nature, in which nothing appears brilliant, also made itself apparent in the works of architecture, without the monumentality suffering thereby.

The arrangement of villas and gardens on the slopes of the hills also required a peculiar arrangement in general, in which two systems extend beside each other. Either the dwelling lies close to the road of access, when the extensive garden design is developed toward the top of the hill, or the casino crowns its upper end, and one descends from it down through the garden.

417 The villas built by Galeazzo Alessi in and around Genoa (

(1512-1572) belong with the best, presented by architecture on the Ligurian coast.

As prominent examples may be mentioned:--

219. Villa Scassi near Genoa.

The Villa Scassi built by Alessi in Sampierdarena near Genoa, whose casino is placed next the road of access. The garden design is developed as in the Roman villas with their ramps, fountains, basins, terraces with grottos, lying on the longitudinal axis and rising toward the mill. The casino is placed back about 196.9 ft. from the road, its facade divided into three parts with very slight projection. The design is carried out on a site about 1148.3 ft. deep, on which are developed the garden with its walks and ponds with areas of 101.7 × 114.8 ft. and 121.4 × 147.6 ft. It is one of the largest villa and garden designs of Genoa, that has in general come down to us without substantial change. (See Pls. 82-86, ground plan and section according to measurements in R. Reinhardt's *Genua und seine Bauten*).¹⁵⁵

Note 155. A larger number of Genoese villas is published Reinhardt's *Renaissance Palast-Architektur in Oberitalien und Toscana*, from 15 th to 18 th centuries. Genoa. Berlin. 1886. E. Wasmuth and Gauthier, P. *Les plus beaux Edifices de la Ville de Gènes et ses Environs*. Paris. 1830. This work is especially recommended for study. A number of the illustrations of this book are given in the text of Reinhardt. Also see *Palazzi antichi di Genova*, collected and drawn by Peter Paul Rubens. Antwerp. 1652.

220. Villa Sauli.

Villa Sauli exhibits an interesting plan with a forecourt enclosed by porticos on three sides before the casino, that is opened by a loggia with three arches on the entrance facade.

221. Villa Cambiaso.

The first work of Alessi, we find in Villa Gambiaso near Albaro. It has an approximately square plan with a facade divided in three parts, while a vestibule with three arches opens between the end pavilions. The ground story is subdivided by three-quarter columns of the Doric order, the upper story by Corinthian pilasters. A high story with mezzanine, console cornice and attic are the usual accessories, beyond which Genoese villas do not go. In the modern sense they are

treated less picturesquely than the Tuscan and Roman. Likewise here ramps lead up to the elevated casino. (See Fig. 336, section and plan).

222. Villa Pallavicini.

By Alessi in the time of 1560-1572 is also Villa Pallavicini delle Peschive, a plastered structure of split stone. The casino with projecting side wings lies high; ramps and grottos lead down to a sunken garden.

223. Villa Franzone.

Likewise at Villa Franzone in S. Francesco d'Albaro, built in the 17th century by Borsotto, the elevated casino is placed at the side next the sea and the sunken garden on the land side.

224. Villa Paradiso.

Villa Paradiso in S. Francesco d'Albaro, erected about 1600 by Vanone, exhibits a long ascending ramp from the entrance on the street to the two story casino with the usual mezzanine and vestibules on two sides on the middle axis. The plan is rectangular, and the facade is divided into a middle part and two projections; in the upper story is arranged a loggia extending through the entire depth of the building, at the other side being another extending only half the depth. The exterior exhibits rich detail forms, and terminates with a console cornice and an attic above it.

225. Neapolitan Villas.

No important Neapolitan villas are earlier than the 18th century. Earlier designs on the Vomero do not equal the Roman on account of the lack of water, "but they are so located, that the outlook would make one forget the most splendid surroundings."

226. Poggio Reale.

The summer palace already mentioned among Neapolitan palaces (see Section XIII) -- thus a villa with extended gardens -- Poggio Reale of King Alfonso, must again be considered among the villas, of which Serlio, Book III, p. 121 et seq. says:-- "This palace has a very beautiful farm and modern things." The court is surrounded by vaulted arcades in two stories; its pavement lies several steps lower than the lower arcade, which thus has an outlook on a basin, down to which lead steps extending around it. (Fig. 338; plan from Serlio). Here the

king ate and took pleasure "with some madame and scamps," that he made tipsy. The climax of pleasure was then reached, when the king had some sluices opened in the steps, through which water entered the court; (see text). -- "O delight of Italy, why were you destroyed by your dissensions," says Serlio after this description, not without melancholy. But "united Italy" did not restore this play of the gods, nor even harmony.-- In the illustration he gives us the elevation of the two story exterior and a section through the court with its basin and the two arched porticos above each other.

Incited by this unfortunately vanished building, Serlio gives an improved design, in which he places instead of the court a hall with increased subordinate rooms and good stairways. He makes the exterior more animated, when he supplied the 4 angle pavilions with belvedere structures, treated the wall surfaces with pilasters, and after Genoese custom inserted a mezzanine above each high story. We cannot deny ourselves the reproduction of this still usable plan in this place. (Fig. 337).

442 Dr. H. Egger published in the Jahrb. der Kunstsammlungen of the most high Imperial House, Vol. 23, Heft 1, Vienna, 1902, the design of Baldassare Peruzzi for the entry of Charles V into Rome, and gives on p. 35 the entirely similar plan (Fig. 26) as the design of B. Peruzzi for the Palace of Caprarola. We permit ourselves to reproduce this in Fig. 340 without further commentary.

441 The rather simple statements of Serlio were extended by the publication of a plan, found in the library of Prince Barberini and published by H. von Geymüller in the great and frequently mentioned work on Tuscany.¹⁵⁶ But we must also in this not recognize the actually executed structure, but rather an ideal project of Giuliano. The basal idea with the columnar stepped court is again to be found in this, as in the small project. Only it no longer shows the square, but a rectangular form, in which the angle pavilions are retained. Otherwise the plan is extended in a way, and is grandly conceived, so that it is counted as one of the most interesting creations of the Early Renaissance. Between the projecting angle pavilions, the entrance front is dominated by a slightly projecting middle portion, from which lead into the stepped court

three parallel passages, as in Palace Farnese in Rome. Since the entrance must occur on a longer side on account of the perspective effect, the opposite side receives a rectangular projection, at the centre of which is found a fountain. Behind this lies a great state hall with a dome-like side room and oblong halls at the sides. Nobly conceived and wonderfully arranged! No less than 14 stairways in this widely extended plan must provide access to the upper story, in which are arranged a multitude of subordinate rooms, with or without anterooms. The long side facades are interrupted by projecting middle parts, so that a general view of incomparable effect is produced, that in connection with the interior, would have raised it to an art work of the very highest rank.

Note 156. On Pl. 8; Giuliano da Sangallo, design made for the King of Naples in the year 1488.

It is a pleasure to examine this plan and to complete the section and elevation in imagination! The first and the improved plan of Serlio for Poggio Reale is indeed the result of a study by his instructor Peruzzi; whether this was intended for the Palace near Caprarola appears doubtful. It is only certain, that both plans coincide, even in details, except that they are reversed and not printed alike, which frequently enough is the case in the publications of that period. (Figs. 337, 339, 340). Caprarola would rather be recalled by a plan by Lorenzone (Fig. 341) for an unknown villa, with its spear-shaped projections, that are repeated on the Palace at Caprarola, though there only in the ground story next the moat, while in the design of Lorenzo, they appear to extend through all the stories.

227. Villas in upper Italy; Garden Giusti in Verona.

In upper Italy the plan of the Garden Giusti at Verona deserves mention already on account of its wonderful cypresses; the arrangement rises on the slope of the hill to the high terrace dominating the valley of the Adige.

228. Villa on Isola Bella in Lake Maggiore.

In the western bay of Lake Maggiore lies the small island composed of mica slate rock, on which Vitaliano Borromeo (died 1690) created a princely seat by the building of a villa and the arrangement of gardens with a magical impression of the imagination. On Isola Bella the grounds rise 105 ft. hi-

high in 10 terraces, adorned by statues, and traversed by shady walks with grottos, enrapturing by a "farseen vegetation."

On Isola Madre 7 terraces support similar ornamentation with precious views of the villages on the lake.

In both examples, the chief part is played, not by the architecture, but by the wonderful location with its tropical vegetation and the view of the landscape surroundings. (Fig. 334).

229. Maxims of Serlio for Villas.

For Italian villa architecture in general, the maxims, examples and designs of Sebastiano di Bartolomeo Serlio (1475-1552) are of very particular interest. Born in Bologna, he 425 worked with Peruzzi in Rome, there drew the antique monuments, was engaged as a wood carver and painter of views, built in Venice Palace Correr (1534), then obtained a place at the court of Francis I at Paris. There his book on architecture (1537-1540) remains his chief merit, that was published in Latin, Italian and also in German (Basle, 1609). In the following statements I use the second Italian edition (Venice, 1584). R. Redtenbacher says (p. 53) of the work, "that it is a good manual of architecture, full of practical hints and suitable rules, particularly on architectural proportions. In Book VIII of his work, Serlio gives 24 examples of "houses outside cities," that besides well known ideas contain capricious suggestions of many kinds. Sometimes are completely enclosed plans with a round, oval or octagonal hall in the middle, around which are grouped the different living rooms. Sometimes the form of the Greek cross is chosen, or that of the great Latin H or I; then again four buildings at the angles are connected by walls and enclose a square garden or court, in the middle of which a pavilion stands; or if a semicircular plan of a court with projecting wings is selected, a adjoined at a right angle by the living rooms; then comes an octagonal court around which lie the closed halls and rooms, where in a labored way projecting structures are also at the cut-off sides. The most singular one is composed of a cross-shaped plan with projecting small transverse buildings at the ends of the arms of the cross.

In many of these suggestions the loggia retains its ancient rights. The houses are either designed as one story on a high

base, or also a half story is added to them; on others only certain parts extend high, as for example the projections or the middle building or both, while the intermediate masses of the structure remain one story. Two story designs are recommended, especially if closed courts are adopted, which are then surrounded by vaulted and arched porticos in the lower story, becoming terraces in the upper story. In stead of porticos and terraces, the master frequently satisfied himself with a continuous balcony, in the upper story of the court. He also sometimes preferred in place of the native flat roof the steep French roof (not the mansard). Then resulted a villa, which consisted of three wings, that enclosed a square court on three sides, and which was closed in front by a wall with an entrance portal. There he also adds great dormers to the roof. (See text).

It was attempted to smuggle in the steep hip roof on flanking pavilions (see text). Burckhardt remarks thereon, that he wished to compliment his French patrons by this addition, when he introduced in his book the Gothic dormers of the French clad in Renaissance forms. A view such as that of the Chateau at Chambord, where the most important characteristic architectural forms are placed on the roof, would in Italy then have produced only ridicule. Leon Battista Alberti only allows obelisks, acroterias and statues as roof decorations.

426 Otherwise Serlio in his villas follows tolerably the Roman or Genoese principle with the arrangement on slopes of hills; the villa in front, behind it the court, with the gardens, water courses and basins above.

429 "Porticos appear to him (Book VII, 46) very much more beautiful in the country than closed facades; a stronger charm lies therein by allowing the eye to penetrate the darkness between the arches, than to be surprised by a wall, where the eye can go no further." The strongest expression of invitation is attained for the building by great recessed semicircular niches.

This idea was expressed by Serlio in his 16th example (p. 39), where furthermore also a half annular hall and a square court are suggested (Fig. 342; plan and elevation). Another example without the absurdity of a half annular hall is given in the 6th suggestion, which he desired to have built on a

small height. The building has a cellar beneath, is assumed to be erected in one story with a plan for a half story. The dimensions of the different rooms are written on the original plan (Fig. 342, elevation).

230. Villa in form of a Windmill.

For the plan considered for a villa in the form of a windmill, one indeed has an erroneous idea, if he has not seen the drawing. Serlio based the design on the words:-- (see text). The building should be surrounded by the estate and be elevated about 5 ft. above the land. The rooms are grouped around a regular rectangular open court, which has a diameter of 80 ft. The outlines of the plan are indeed rather animated, and these might give the ground ideas for a modern central prison with some wings containing prison cells in their corresponding extensions. The four projecting structures at N, H, T and G (in the original plan) are two story, the other parts being designed as one story, whereby an animated structure is ensured. (See Fig. 344, plan, and Fig. 344, plan of Castle del Monte as its model).

231. Villa with court plan.

His 12 th design shows us the rooms around the circular court, which in the first story is surrounded by a portico, utilized above as a terrace (Fig. 235); the 14 th has a similarly arranged open court. Before the garden front is placed a narrow ornamental garden with a flight of steps in two branches, by which one descends to the great garden. The building is two story. In the court a balcony resting on consoles extends around the upper story.

The 21 st exhibits in the plan the form of a Greek cross with an octagonal court at the intersection. About each arm of the cross is arranged a small ornamental garden.

The 29 th gives an H-shaped plan with a front garden and a loggia at the main entrance (Fig. 346).

232. Villas with a middle Hall.

Instead of the round open courts, as they are found planned and half executed at Villa Madama in the vicinity of Rome, and completed at the Palace in Caprarola, those of polygonal and elliptical form were suggested by him. Further in place of the open atrium he allows "the covered atrium" to appear, i.e., the open court becomes a covered hall, from which one

enters the different rooms adjoining it.

Like the court, the form of the hall is then sometimes elliptical (1 st design), sometimes octagonal (Fig. 349), "without any internal court, and for sufficient light it will have a front court. The height of the hall will be 30 ft., and it will receive most of its light from windows above, and from vertical ones in that part of the court." Thus a hall lighted by high side light from a raised lantern. To the attic lead four circular winding stairways, that lie in the dead angles of the octagon (Fig. 348). The 3 rd design shows a square internal hall, that is lighted by eight great windows and eight small ones placed in a raised attic above the main cornice. In the 7 th and 8 th, one of the halls likewise extends upward and receives its light from four sides, and the other, a circular hall, will only be lighted from one side, and therefore Serlio says of this; "The hall will thus be freed from the heat of the sun." An 11 th design with rectangular hall and high side light is given in Fig. 351.

In the 10 th suggestion the central elevated hall, which in plan shows 4 rectangular projections, would be lighted by (4 x 3) oblong high windows.

Instead of the recessed loggia, Serlio also provides the long front portico for the villa, i.e., the built-in portico with piers as in Fig. 352, where the enclosed ends are raised in the form of small towers, which is repeated over the middle arch. To make the effect of the facade more massive, he also employs the so-called colossal order (Fig. 353), even for the subdivision of small high and slender towers (Fig. 354).

Serlio gives much and assured material for secular and church buildings, but particularly for villas of his time; whoever understands how to follow him, will also learn to read from the awkward drawings of his work what he meant.

238. Villas of Palladio.

Another mighty master, more highly esteemed as a creating artist than as a writer, is Andrea Palladio from Vicenza, (1518 (1508?) - 1580), who owes so much to the instructions of Serlio. Palladio's designs are clear and also distinct in plan, and R. Redtenbacher is of the opinion, that only he has known how to express the axiom:-- "A good plan must also make a beautiful appearance." He placed symmetry above picturesque

arrangement; to that and to an imposing effect, according to his ideas, he commonly sacrificed convenience. But the conception of "convenience" always differed at different times, and our present ideas cannot coincide with those of those past ages. The claims of life and the mode of living have become different. When a contemporary says, "I could not live in a Palladian villa," then if it became a possibility, a man would come to the same decision, as if the requirement were made to him (Palladio?) to find his way in a modern home. C

433 Climate also plays a part. I believe, that the words attributed to Palladio, for which B. Peruzzi (died 1573) would be better suited, in view of the plan of plans, of Palace Massimi alle colonne at Rome.

Palladio went to school to Peruzzi and Serlio, and many architectural motives, that are particularly assigned to him as his own, were already in use in antiquity and by earlier masters of the Renaissance, as for example, the combination of straight beams with arches. For example, Peruzzi had already executed this on Palace Linotte in Rome. (See the illustration in Letarouilly. Text. Notices historiques et critiques. p. 188 et seq. Pls. 49 - 51).

To the detail is not always given the desirable care and harmony, Palladio knew not how to treat it attractively, this is like most of his works generally "classical but cold." The tasteless becomes the ideal and in simplicity lies beauty.

434 The great overestimation of his works until in the second half of the 19th century is succeeded by a cooler judgment, of which now again should a school be made. I would here recall the poem of my deceased friend J. V. von Scheffel, that he wrote as a festival piece for the Assembly of German architects and engineers in Carlsruhe (1870), on the estimation of the buildings of Carl Wilhelms' well planned manufacturing city:--

"Weinbrenner shows him now to build "classically,"

Frozen music he terms his works,

Hence they have so long been frozen."

Like the Italian, so it occurred to the Rhenish-Swabian Palladio. Likewise the dead are subject to fashion; on the fashionable value of their works one must question only an antiquarian in architecture. He is a good measurer of design and

Note 157. But those who are surprised at our reports the
 works of the real fellows have conferred on him a letter to-
 us in the necessary time, when they cultivated and have re-
 stood what was to be received from him. It is singular, that
 the same man, who raised the prize of his work to a high,
 and sought to establish a school for them, what and destroy
 them, were they stand in the way. A secret protection of a
 monument in the Byron temple. He won the honor and on the
 "line" can give any beautiful songs there. Yet, it is the
 course of the world, and no art work is spared against the
 of the French king, and would have then found the well known
 value of Atlas into a sacred mother.

The books and works of Voltaire have brought me a great
 of literary opinions in all languages, that as I have seen a
 to all people opinions. First is to be mentioned the
 of the French king, and would have then found the well known
 value of Atlas into a sacred mother.

Note 158. The text for illustration.

Note 159. The text for illustration.

of taste. 157

Note 157. But those who are surprised at and revere the works of the real Palladio have conferred on him a better fate in the succeeding time, when they cultivated and have received what was to be received from him. It is singular, that the some men, who raised the praise of his works to a hymn, and sought to establish a school for them, spoil and destroy them, where they stand in the way. O sacred protection of monuments in the German empire! We "on the Neckar and on the Rhine" can sing many beautiful songs thereon. Yet, it is the course of the world, and no art work is ensured against the prevailing taste. Still also in their time, for the pleasure of the French king, men would have transformed the well grown Venus of Arles into a slender maiden.

The books and works of Palladio have brought out an excess of literary products in all languages, that at length must refer to all usable problems. First is to be mentioned the master himself in his Venetian edition of 1570, "Quattro libri dell'architettura," which passed through new editions and reprints in 1531 and later. A German edition with additions by George Böckler appeared in 1698 in Nuremberg. By Lovisa a Rialto in Venice another came out (1711), characterized by bad illustrations, but which is just as good or as bad as the other contemporary publications with their clumsy woodcuts in the style of Serlio, or with incorrect and technically quite insufficient drawings of plans. Incorrectly preferred on the other hand are the two editions with French text (II, 1736) by O. B. Scamozzi, where the letters O.B. denote the name of the editor, Octave Bertotti, and Scamozzi is merely the added name, that in view of the model personality of Vincenzo Scamozzi, revered by him, the editor of the "Architettura Universale" ¹⁵⁸ has selected. The added name remains preferably in history, and the family name disappears after old customs. To cite the aforesaid O. Bertotti by his nickname "Scamozzi" only affords opportunity for errors.

Note 158. See text for illustration.

"To the most serene Maximilian, Archduke of Austria, etc." In Piazzola. 1687. At Venice. Aug. 6. 1615. Date of the dedication to Maximilian. With this Vincenzo should not be confused O. B. Scamozzi.

The second edition of O. B. Scamozzi (1736), I employed for many earlier references. In the present one I preferred the old Venetian edition of the year 1570, not on account of the quality of the illustrations, but rather because what was therein presented seemed to me more original and more correct, and furthermore the possibility of a more assured and rapid reference was offered. The copperplates of O. Bartotti give good and bad, what one needs for a house, but they express what the architect should best know and must know, more cautiously than the old master, and also give scarcely any indication of the building material mentioned, of the construction of certain structural parts, of stonecutting, but particularly no points on the situation of buildings or sections of the site, and are restricted to disconnected and doubtfully drawn plates. They are children of their time, who were satisfied with illustrations in their taste.

Of modern writers, who have busied themselves with the villas of Palladio, only J. Burckhardt and Fritz Burger are to be named. The former expressed himself in his *Geschichte der Renaissance in Italien* as follows. (Second edition, 1878).

435 "Of the villas of Palladio, the Villa Suburbana, the Rotonda Capra near Vicenza is the most famous; the others are mostly great and regular country seats, standing in the midst of their agricultural structures, and often of very beautiful design; except that therein did Palladio mistake the true art form of the villa, that its facade did not always open as a loggia, but before the closed wall appeared a temple portico, even with a pediment; and even where the facade was opened, instead of a true loggia was generally produced a temple portico, even two story with a pediment."

On the other hand, in my opinion, an expression for the side criticized has not been made, not even in the later edition of Burckhardt's book by Holzinger. Likewise I assented to the views of Burckhardt in his time, even if not entirely in the same words. Therefore so that the superstition of the ignorant may not extend farther, as if Durm or Holzinger had invented the principle alluded to, I insert instead of my earlier words the original text of the famous old master, Jacopo Burckhardt.

F. Burger (*Die Villen des Andrea Palladio*, Leipzig-Munich,

1909) finds the Palladian villas serious and earnest, with cheerful interior decorations and the neglect of costly materials, (I might say the same of the most economical, for the interior and the exterior), whereby he emphasizes, that the rudimentary plans of Serlio for his various villas experienced a magnificent completion by Palladio. I believe that also no objection to this can be made by those well informed. Also indeed on the other hand, that the style of the city palace does not predominate in the villas mentioned, instead of free and rural charm.

When Gurlitt, now a later Doctor of Engineering, makes known, that until now and particularly on the country houses of Palladio, no scientific work has been published, and in that belief has commenced printing a contribution to the knowledge of these buildings in a desirable manner, on the ground of a tour in the Spring of 1908 (edition of 1909), then must it be assumed, that he was not yet acquainted with the frequently beautiful and scientific work of Fritz Burger, and has not understood the expressions of J. Burckhardt. Of statements like the following:-- "That in different villa buildings of Palladio the loggia lies in the midst of the body of the building, and opens as an arch between rectangular piers" -- noting like it, praise God, is to be found in the two gentlemen mentioned.

Otherwise I must also admit, that technical methods are not always clearly expressed in them, and in Burger greater weight is sometimes placed on the diction, than on the meaning.

The villas of Palladio lie in great part in Venetian territory, and must therefore be designated as Venetian.

234. Venetian Villas.

In Venice the country house is combined with the farm buildings, without architectural connection, as shown in Fig. 355 for a Venetian country villa near Crescentio -- de Agricultura -- (Venice. 1495), and in F. Burger, Pl. 1. The entrance gateway (for the enclosures of the grounds) leads into the dwelling of the laborers and the stables; separated from those by a wall succeeds a forecourt with owner's residence, two stories high and crowned by battlements, dominated by a detached tower. Outside the enclosure is placed a dovecot, and adjoining the opposite side is the ornamental garden with its

shrubbery and the park.

436 235. Design of old Venetian Country House..

This primitive design exhibits to us by an old view the completeness of the Venetian villa, still affected by mediaeval appearance, and then another view from the *codex Maggi* (See Burger, Pl. 9) gives a likewise Venetian villa from the 16th century, where in place of the forecourt is arranged a great ornamental garden with fountains, shaded alleys and open pavilions, in one of which a social gathering is at table. The mediaeval battlements and the tower of the residence are omitted, and the facade shows the type of the closed Renaissance palace without porticos and loggias.

We thereby obtain starting points for the nearest surroundings of the Venetian villa, as it certainly continued in the time of Palladio.

236. Villa Maser.

Of another made famous by Paolo Veronese's paintings, Villa Maser near Treviso, built for Daniele Barbaro, we actually have assured evidence for the plan in general. We first pass through the entrance gateway from the present road of access, into a great wide fore garden with restrained vegetation, divided into panels by box hedges, to pass along a broad walk to the lengthy villa with the temple-like middle building extending in two stories, and the symmetrically adjoining arched porticos with piers, that are terminated by two angle pavilions furnished with pediments. (Fig. 356).

The building has wings extending backward with room for farming, which enclose a court, whose second long side is adorned by a grotto, and extends into the adjoining hill. Above this rises the forest on the hill.

Including all ornaments, capitals, festoons, statues, etc., it is constructed of bricks, and was again described in recent times by Reinhardt in the journal mentioned below, ¹⁵⁹ with the addition of illustrations. But these are so thoroughly different in the various publications, that one does not know, what the art-loving public will make of such offerings. In addition to this, Auer in his article on Palladio in the same periodical states, that the exterior has been injured by the hands of amateurs, while in the same journal, Janitschek states, on the occasion of the description of the frescos by

437 Palo Veronese in this villa," the effect of the beautiful middle building is greatly injured by the side wings, whose angle pavilions are disfigured by ugly ogee volutes." O. Bertotti cannot be made responsible for this, since the view of this villa in the edition of "Architettura" carefully supervised by Palladio himself in nowise differs from the form, that it possesses today. Janitschek then refers to Book II, Chapter 14, page 51, of the said edition, to which also Jean Rossi refers in his text on Villa Maser!

Note 159. Zeits. für Bild. Kunst. 1866. p. 61-64; 1882. P. 65 et seq.; 1887. p. 364.

So much is now certain from the view from nature in Fig. 353, that Reinhardt in his illustration for Villa Maser gives something similar, but not this building, but also Janitschek errs when he says, that the construction agrees with what Palladio gives in the edition of his book in 1570, which he edited himself. The middle portion in general coincides in execution with that contained in the plans, as far as to the statues on the pediments and the beautiful figure relief in the tympanum. The former do not exist; on the other hand instead of the cartouche with the arms and bands as drawn, there is found a double eagle with nude lying and kneeling figures. The keystones of the side porticos bear heads; but none are given in the drawings. The angle pavilions have rectangular niches with statues in the ashlar piers; the plan shows these without them. The pediments have neither in the plans nor in the construction "ugly ogee volutes," but on the contrary, a harmoniously shaped, quadrant connections; for the substructure of the eagle of the pavilion is square in construction but rectangular in the drawing, and accordingly the connection is a quadrant and not an oval. In the former is painted on one side a spirit of the time with a band of figures, on the other a series of animals!

The great decorator, Paolo Veronese, in his splendid decoration of the interiors allowed himself some little jokes, when he astonishes the observer on entering by two figures, a page and a maiden, who appear to look inquisitively at him. Then further at the rear of the series of rooms with a perspective from one end to the other, are painted two doorways, through which one seems to look out into the open air, and a

youth in hunting costume appears to enter through one, and a young lady through the other. A plan of the villa is given by Fig. 356. In spite of some small contradictions in the various great publications, it is correct on the whole, especially when one considers that in the course of time not everything can have remained in its original place. I owe to the possessor at that time, Giallonelli, a visit in Oct. 1903, which is not always easily obtained. Any checking of the different dimensions was not possible for me. F. Burger records the statements of O. Bertolli as to what was found at that time. The statements of Lovisa a Rialto compared therewith give no differences of importance. O. Bertolli (Scamozzi) draws the main cornice of the intermediate parts between the middle building and the pavilions differently from what is given by the photographic view. The latter shows a slightly projecting rafter cornice, the former a stone cornice.

489 In Fig. 357 I give an oblique view of the structure from my sketch (1903). An elevation of the garden decoration (grotto) of Villa Maser is to be found in F. Burger (Pl. 30).

Yet we desire, that if use is also made of it in certain circles, this be small and not too great.

F. Burger distinguishes in the villa buildings of Palladio, between his youthful works, those of the middle period, and of the late time. The dates of erection of the separate works makes a check possible. In the late period are placed Villas Maser, Meledo, Pajana and Foscari.

A scientific and historical investigation assigns to him about 20 different villas, of which we will emphasize the most imposing; otherwise I must refer to the original work.

1. Villa Thiene in Cicognara
2. Villa Pisani at Bagnola.
3. Villa Sarego Santa Sofia near Verona with the interesting court facade with Ionic columns, which are coursed in drums in the style of the Ammannati court at Palace Pitti.
4. Villa Foscari near Malcontenta, located on the water, with a high and plain substructure with a flight of steps and a hexastyle Ionic temple facade. (Illustration in Burger, Pl. 31).
- 440 5. Villa Cornaro near Planbino with projecting middle building, that consists of two porticos above each other with pediment termination.

6. Villa Pojana en Pajana with round arched closed portico. (Illustration in Burger. Pl. 37).
7. Villa Emo in Fanzolo, located in the plain. Burger, Pl. 40.
8. Villa Padoer near Fratta Polesine. (Elevation of garden side with flight of steps and portico. (Burger. Pl. 43).
9. Villa Rotonda near Vicenza, built for marquis Capra, w with a great circular hall in the middle.
10. Villa Meledo-Trissino. If completed, this would have been the most beautiful villa building, and at the same time "one of the most splendid fruits of Palladio's studies of antique buildings."

237. Villa Rotonda.

On the celebrated Villa Rotonda F. Burger remarks (p. 54);-- "Therefore the completed Rotonda has finally become an architectural monster, neither fish nor flesh, and the worst is, that later times have taken this building in such sacred earnestness."

Goethe in his letter of Sept. 22, 1786, named the same Rotonda as a snow building, square and containing a circular hall within it, lighted from above. One might dwell within it, but would not find it comfortable; but the hall and rooms would scarcely suffice for the needs of a noble family during a summer occupancy. From each of the four sides one ascends a flight of steps and enters a portico, composed of 6 Corinthian columns.

Goethe errs, for the columns belong to the Ionic order, but he is correct, when he says that architecture has never carried its luxury farther, for the area occupied by the external steps and the porticos is much greater than that of the house itself. He is of the opinion that the hall may be of the most beautiful proportions, and also the rooms, which again is true. (Fig. 359). We also agree with his conception of the whole, and with him wonder at the variety, by which the main mass of the building together with the projecting columns moves before the eyes of one walking around it, and personifying the purpose of the possessor, who desired to leave behind a great entailed estate, and at the same time a sensible monument of his wealth. And as now the building is visible from all points of the vicinity in its magnificence, so the outlook from it over hills and landscape is also most pleasing.

Originally built as a quiet residence for Paolo Almerico, referendary of Pius IV and honorary citizen of the city of Rome, the estate was sold after his death (1589) by Odorico and Mario Capra for 18,000 ducats.

According to Magagno the Rotonda was completed in 1582. M Mazzari praised in the year 1511 Almerico, that he in his time adorned the rotunda with stucco figures and paintings; Muttoni says that the vault was painted by Alessandro Maganza i in the style of Paolo Veronese, while the walls were decorated by the French painter Lodovico d'Oroqui with very animated pictures, Barocco figures standing among rich architecture (Jupiter, Bacchus, -- Venus, Neptune, -- Apollo, Diana, -- Minerva, Mercury). The ceilings of the larger rooms were painted by Giambattista More, called India, and the stucco work of the dome must be by Alessandro Vittorio, a pupil of Sansovino. According to Burger, these decorations "must" have originated at latest in 1589, since Almerico died in 1589. Therefore the date from the time after the death of Palladio (1580). The statues on the building are works of the sculptor Albaresi. (See Burger, p. 64. Note 2).

Goethe noted also the inscriptions on the four pediment sides, that together form a whole, "that indeed deserves to be recorder. (See text).

442. In conclusion, Goethe is of the opinion, that one might learn patience and wait at less expense.

From personal observation, I might remark on the internal decoration, that first the domed room appears lower than in the drawing, and that actually its wall surfaces between the vaulted passages are divided into panels by four painted columns of the Corinthian order. Their capitals are gilded, the shafts are grayish red, imitating marble, and between them are painted in the distance other supports and entablatures, before which stand the figures mentioned, about twice life size, very skilfully painted and also carefully drawn. I have noted these as Mars, Mercury -- Jupiter, Bacchus -- Apollo, Diana -- Venus, Chronos (eating his children). The figures are designed as standing on pedestals. The intermediate doorways with the pediment caps and the reclining figures and the small square windows above exist just as given by the publications mentioned. But the supports of the latter do not bear

heads, in their places being painted shells in yellow color with fruits and flowers. The gallery extending around the circular room and its balustrade are of wood and are painted. The wall surfaces behind them with their exit doors on the gallery are divided into panels by elongated consoles and are painted white and gold. They are terminated by a banded architrave, a decorated frieze and a console cornice, above which rises the dome. On the edge of the cornice stand and lie detached figures in white stucco, corresponding to the four arched openings. Behind the sitting figures are arranged round-arched niches whose surfaces are painted deep red and blue, and whose joints are accented by gold lines, above being a painting with figures in gray on gray enclosed within rich cartouche work. Between these 4 panels are four other sculptures, two each over each other, arranged in equally rich cartouches in white and gold, the two variously colored pictures containing besides allegorical figures:--

1. A female figure with golden and ermine garments and an elephant.
2. A female figure with green garments and an unicorn.
3. Another with a white horse arising.
4. Another with brocade garments and nude children.

The paintings of the upper zone exhibit nude female figures, winged geniuses with trumpets, etc.

A console cornice terminates the surface of the dome at top, the vertex is closed by a white glazed polygonal lantern, through which daylight falls into the interior. It is indeed of later date, and recalls in form the skylights of the Munich Pinacothek by Klenze. It has no connection in its external appearance with the form of lantern on the plates of the old publications. The light enters sidewise and the ceiling is not glazed. Judging from some places where the internal plastering has fallen, the dome is vaulted in bricks, and its external form was compelled by the desired mode of covering by tiles. Externally the dome is graded in steps, as done on so many antique domes (Pantheon). (See my sketches of the internal decoration and the construction of the dome in Figs. 363 a, b). In six vertical offsets rises the masonry over the dome, their front risers painted white, and the horizontal surfaces are slightly inclined forward, and are covered by a

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